DOCUMENT RESUME

ED 021 959 VT 001 486

By- Hamilton, Ross E.

A REPORT ON THE ADMINISTRATOR'S CONFERENCE ON VOCATIONAL EDUCATION (CLEVELAND, OHIO, MAY 23-24, 1965).

Educational Research Council of Greater Cleveland, Ohio.
Pub Date 65
Note- 32p.
EDRS Price MF-$0.25 HC-$1.36
Descriptors- ADMINISTRATIVE PERSONNEL, BEHAVIOR DEVELOPMENT, *CONFERENCES, *EDUCATIONAL OBJECTIVES, *EDUCATIONAL PLANNING, EMPLOYMENT, EMPLOYMENT QUALIFICATIONS, EMPLOYMENT TRENDS, HUMAN DEVELOPMENT, LABOR FORCE, LEADERSHIP, PUBLIC OPINION, SPEECHES, *VOCATIONAL EDUCATION

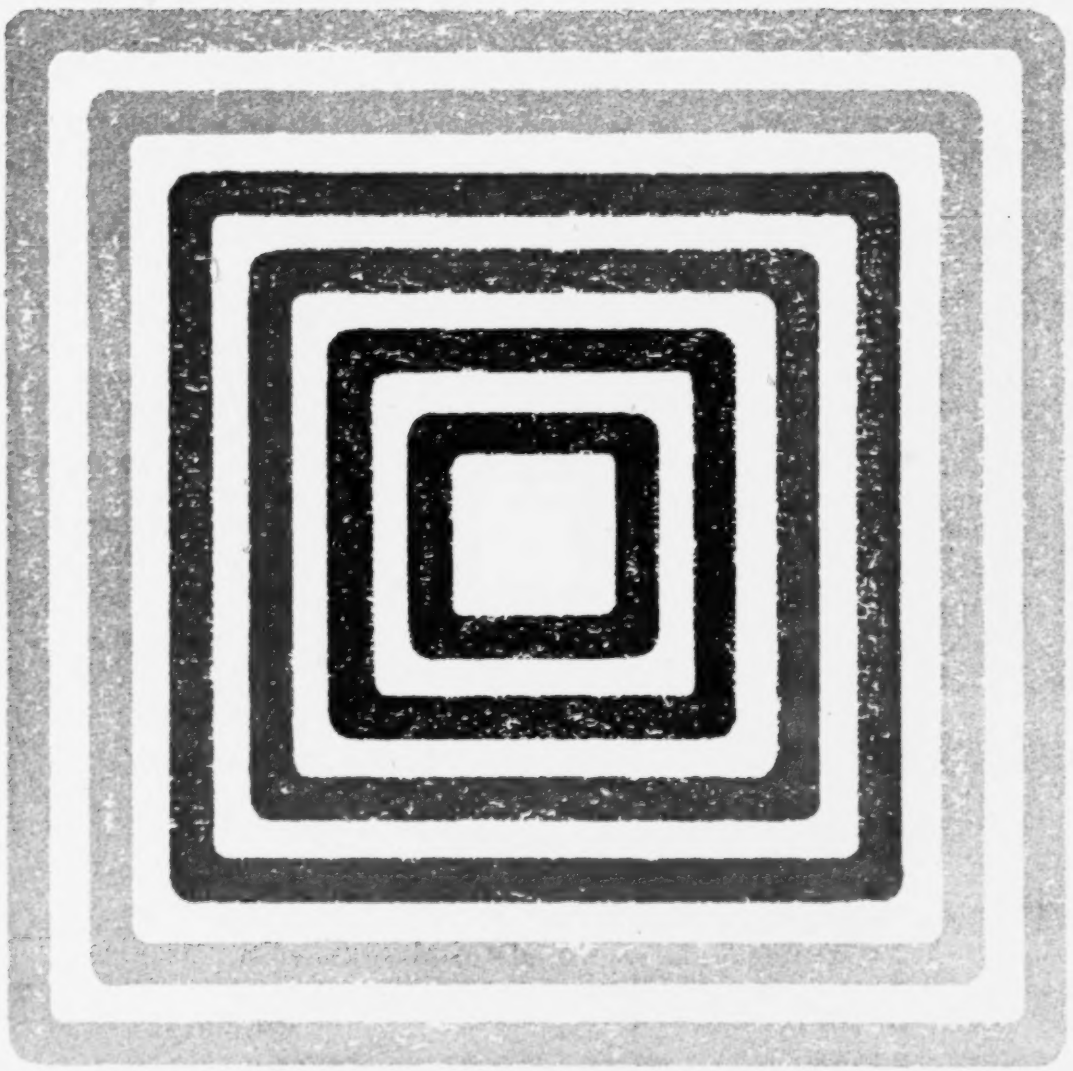
Seventy-one educator-administrators participated in a conference organized to produce a working definition of vocational education. The speakers were an economist, a corporation president, a vocational education specialist, a child behavior and development specialist, and an educational administrator. The speeches were--(1) "Our Work Force Is Changing," by Samuel C. Kelley, (2) "Planning for an Effective Work Force," by C. D. Shannon, (3) "Vocational-Technical Education in the Light of Our Knowledge of Human Behavior," by Ralph H. Ojemann, (4) "A New Rationale for Vocational Education," by Melvin L. Barlow, and (5) "A Challenge to Administrative Leadership" by Grant Venn. (SL)

1486
c.1

Educational Research Council of Greater Cleveland

A REPORT:

on the Administrator's Conference on Vocational Education



VT 01486
ED021959

Participating School Districts*

SCHOOL DISTRICTS	CHIEF EXECUTIVES
Aurora Public Schools	Dr. Robert G. Salisbury
Avon Lake Public Schools	Mr. Robert J. Robinson
Bay Village	Dr. Robert C. Cawrse
Berea	Dr. Paul C. Gallaher
Board of Catholic Education (Cleveland Diocese)	The Most Rev. C.E. Elwell
Bradford Area Schools (Bradford, Pennsylvania)	Mr. George A. Bell
Brecksville	Dr. Merton J. Merring
Brockton Public Schools (Brockton, Massachusetts)	Mr. Edwin A. Nelson
Brooklyn	Mr. Clarence L. Rice
Chardon	Dr. Arthur R. Williamson
Cuyahoga Heights	Dr. John R. Thorson
Fairview Park	Dr. Frank W. Barr
Independence	Mr. Stanley E. Skoczen
Kirtland	Mr. Douglas McClintock
Lakewood	Dr. John Ellis
Laurel School	Mr. Daniel O.S. Jennings
Lutheran Schools (Greater Cleveland)	Dr. E.F. Sagehorn
Mayfield	Mr. Joseph L. Baird
Muskegon Public Schools (Muskegon, Michigan)	Mr. William L. Austin
Niles Public Schools (Niles, Michigan)	Mr. Richard B. Warren
North Olmsted	Dr. Robert Van Auken
Olmsted Falls	Dr. Donald Cobb
Orange	Dr. Harold W. Fulk
Owatonna Public Schools (Owatonna, Minnesota)	Mr. C.P. Mickelson
Rocky River	Mr. Lewis L. Burkhart
South Euclid-Lyndhurst	Dr. Marvin H. Maire
Springfield Local Schools (Ontario, Ohio)	Mr. D. D. Rummel
University School	Mr. Rowland P. McKinley, Jr.
Washington Township Schools (Centerville, Ohio)	Mr. Richard Preston
Westlake	Dr. Franklin B. Walter
Wickliffe	Mr. Gerald H. Michel

***January 1967**

"PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL HAS BEEN GRANTED BY Educational Research Council of Greater Cleveland TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE U.S. OFFICE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER."

Printed at the Offices of
Educational Research Council of Greater Cleveland
Rockefeller Bldg. – Cleveland, Ohio 44113

Copyright © 1965 Educational Research Council of Greater Cleveland
All rights reserved. Printed in the United States of America.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

A Report on the Administrator's Conference on Vocational Education conducted by the Educational Research Council of Greater Cleveland held at the Sheraton-Cleveland Hotel May 23, 24, 1965, Cleveland, Ohio

Prepared by Ross E. Hamilton

"When one stops to think about the significance of work in the fullest possible self realization of the individual, it is rather thought provoking that schools in America have not yet evolved a plan to guide each student toward the optimum in work experience. The need for this is now becoming apparent."

by George H. Baird, Executive Director
Educational Research Council
of Greater Cleveland

"For the first time in the history of the Nation the schools have been challenged by law to see that '. . . persons of all ages in all communities of the state. . . will have ready access to vocational training or retraining which is of high quality, which is realistic in the light of actual or anticipated opportunities for gainful employment, and which is suited to their needs, interests, and ability to benefit from such training. . .' "

by George B. Brain, President
American Association
of School Administrators

Summary

The Administrators' Conference on Vocational Education conducted by the Educational Research Council of Greater Cleveland successfully hurdled the present preoccupation with minutiae concerning vocational education. The participants began thinking into the future, thinking into the relationships of the American economy to the world economy, thinking into a new context for education and the role that it will play in the occupational preparation of people.

In retrospect the conference must be examined as a part of a much larger process that is under way. For many months leaders in the participating school systems of the Educational Research Council have been working for the development and improvement of programs of vocational education. A search for a working definition of vocational education yielded none, so the conference was organized to produce a statement.

Five speeches were carefully planned into the conference. The speakers came from different fields. They included an economist with a knowledge of manpower problems in the United States as well as the countries of Europe, North and South America; the president of a profit corporation operating in the heart of a large industrial complex who is sensitive to the changes being brought about by numerical control; a specialist in vocational education who has a background of experience in industry and in various phases of education; and an educational administrator who, like the specialist in vocational education, has national stature on the subject.

Provision was made for thorough discussion of these talks. Both the talks and the discussions were recorded so that it was possible to examine them in search of factors which the conferees felt must be incorporated into a working definition.

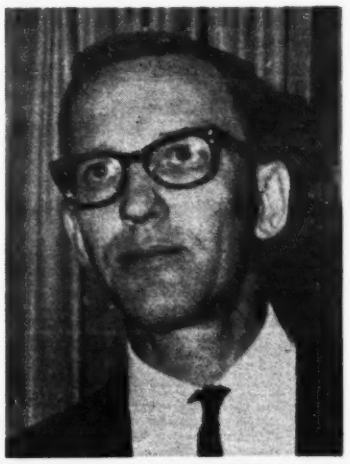
All the speakers agreed that there was a need for a new rationale for vocational education and all offered suggestions on what this new rationale should include.

To grasp the significance of the outcomes of the conference, one must clear his mind of all the this-vs-that arguments concerning vocational education, set aside all the administrative debris of the day, close the law books and volumes of regulations, and draw a curtain on the concerns of the vested interest groups. These man-made conditions can be changed and will be changed if one simply asks what is important to assist people to become occupationally competent in the realities of work of today and tomorrow.

Read the papers that follow and you will discover why the conferees rejected the compartmentalization of vocational education and established occupational preparation as a major objective of education for all. The applied and theoretical courses are both important in work competence. Relationships between human beings, communication skills and abilities also have their place. The conferees agreed that in the maze of pressures on students, that a fundamental curriculum restructuring was needed and that this should include the experiences which lead to occupational competence for all.

As a first step, a new counselling process was proposed and the conferees left the meeting with a determination to involve the citizens of their communities in the creation of a new mandate from the people - occupational competence for all.

Our Work Force Is Changing



Samuel C. Kelley is one of the few specialists in labor and manpower economics in America. Keenly interested in regional development and manpower planning, Dr. Kelley's services are in constant demand. This demand extends to European and Latin American countries as a part of our Federal program of assistance to other nations. At Ohio State University he is an Associate Professor of Economics and Co-Director of the Project for Human Resource Research.

OUR WORK FORCE IS CHANGING

In his very kind introduction Dr. Blankenship mentioned that I have been away from the United States for much of the last three years, and that some of this recent experience is particularly relevant to the topic that you are going to pursue in the next few days. During these years I have been assisting a number of developing countries in planning their educational systems in relation to their needs for economic and social development.

The relevance of this experience to the present discussion is simply that the activities of these countries in shaping education toward national purposes is a reflection of a major change in the concept and role of education. If I were to suggest a modification of the theme of this conference, I would propose that it be changed from "A New Dimension for Vocational Education" to "A New Context for Vocational Education," for we are now beginning to think of education in new terms, and the impetus for this change is largely a function of changing vocational requirements.

Education an Instrument of Change

This change is, of course, a result of a much broader revolution that is taking place in the world, one to which we are all sensitive in view of our important role. This concerns the fact that 8 percent of the world's population live in countries that have less than half of the world's economic output, while 50 percent live in countries that have only 8 percent of the total product. This long-standing condition is no longer acceptable either to those of us who are at the top of the economic pyramid, or the vast number at the bottom. The aspirations of the people of the world today are changing at a tremendous pace. This is increasingly evident to Americans in political terms, as well as in the programs of assistance and aid that we are providing for developing countries. All through the world the prime concern of people is to change their way of life, and it is increasingly evident that the major instrument to change is education.

Those nations that aspire to the level of well-being that we represent can approximate it only by very drastic changes in their economic and social orders. Economists have long believed that the prime requisite for economic development and growth was the ability of a society to accumulate capital, and much of our assistance to other countries has been in the transfer of capital and capital equipment. What has become obvious in these countries is that human resources, rather than capital resources, are far more vital in the process. The real bottleneck to development and social change in most of the world's countries is the absence of the skills, motivations and attitudes, and other human characteristics that are appropriate to an industrial society.

Education an Investment

This relationship between education and economic and social development has become evident in two ways. First, the ability of these countries to use modern technology and modern techniques of production is limited at the outset by the absence of relevant skills. They have very few of the high level skills that these processes require. In part, this is because of the limited quantity of education available in these countries; but equally important is the quality of that education. In these traditional societies, educational systems are structured toward traditional roles and objectives, and based on traditional values. They are not relevant to a modern society or to one in the process of dynamic change.

The development potential of these nations will depend first of all on their capacities to make a tremendous investment in their educational system and, secondly, to change the nature of that system. These terms describe an expanding discussion of investment in human capital, investment in education, investment in human resources. This is the vocabulary and terminology of this time.

If there is a single objective on which all nations at all levels of development agree, it is the objective of educational expansion and change. Although interest in this problem began in the undeveloped and developing countries, it has spread very rapidly to the most advanced countries of the world. It is interesting to note, for example, that fifteen countries of Western Europe are now involved in very extensive programs of educational planning, and that the planning of education is also related to the objectives of these nations for economic development and the social change that is implicit in the process of growth.

Education a Social Instrument

What I believe to be important to us about this new context is that it has caused not only the developing countries but Americans as well, to think of education in two dimensions. In this context, education is a social instrument rather than a social end. It is an act of investment in people. In thinking of investment, one must necessarily think in terms of the objectives and end purposes toward which it is directed. In the case of education, these are a set of social requirements expressed in terms of human characteristics, skills, mobility, innovational capacity, attitudes and values. The educational instruments for creating these characteristics must be related to these ultimate purposes.

Education a System of Production

Secondly, we are beginning to think of education as a system of production. We begin to apply to the educational system the same criteria that we apply to any other system of production. We are primarily concerned with the ability to create the necessary resources for this system, to use these resources effectively, and to substitute the best technology for the more primitive forms to which we are attached. There can be few areas of production in which technology has advanced as slowly as in the field of Education.

Education for the Future

In this conceptual framework it becomes increasingly important to look at the future role of the educational system. It requires a long look ahead to permit

a definition of the kind of society that we hope to achieve, the nature of its requirements, and the implications of these requirements for the educational system. Long term planning becomes essential because the educational system is, in economic terms, a system of roundabout production. There is a great time lag between the time you put an input in and the time it comes out as a finished product. The educationalist has to anticipate over the long term the kind of product that is required. If the economy will require a significant increase in the number of professional persons employed, it is quite obvious that there is little that you can do to an educational system today that will have any appreciable effect on the supply of these high level skills in less than ten to fifteen years. The lead time required is somewhat less in this country than in others, simply because we have a very large secondary school system. Unlike less developed countries, we do not have to begin at the beginning in order to change the product flow. Nevertheless, we do have to plan the educational system today in terms of the future conditions which it will serve.

Educators everywhere are beginning to think in these terms. They are increasingly concerned with the problem of projecting requirements, and the planning of educational systems has become the key act, or a key element, in the whole process of planning for the future. The process of planning involves, as was suggested a moment ago, looking at a society that does not yet exist, and trying to interpret as well as one can what these elements are and what they mean for present action. What kind of a society will education serve with what kinds of requirements for people? What kind of an individual is required to create a desirable society?

Occupational Preparation Vital Part of Education

Although we Americans have not been as sensitive to this change as others, since we are educationally as well as economically the most affluent nation in the world, this movement provides a meaningful context for our own view of vocational education today. Vocational education has, I believe, been largely outside of the context of education in this country. This is essentially because we have conceived of education as an end product, and have rarely defined its ultimate purpose. In other parts of the world the vocational aspect of education is increasingly the vital aspect, and it is rapidly achieving the same kind of importance in this society. We too have aspirations for economic and social growth, both in terms of our own needs and wants and in terms of our capacity to solve some of the social problems that we must resolve. A high rate of economic growth becomes absolutely essential to these purposes, and to our position among nations. We are a leader, largely in terms of our ability to utilize human knowledge in technical forms. We must maintain this position as a part of the responsibility for political and economic leadership. Education is essential to this purpose.

Way of Work Part of Life

The process of growth in an advanced country such as the United States or England is largely a function of changing technique and changing technology. It depends upon the ability of the society to find new ways of doing things and to develop new opportunities. This, of course, means that it is going to change the nature and the character of work. If we wish to avoid the kinds of problems that we now face - problems of unemployable human resources - problems of expanding unemployment - and limits on growth resulting from shortage of specific skills, we must be concerned with the means and instruments for producing these kinds of human changes. Further, there is a great interaction between the processes by which we produce and the ways in which we live. The way of life is intimately associated with the way of work.

As we pursue these economic goals we create a whole host of new problems requiring new perceptions and new patterns of behavior on the part of individuals. We are not uniquely different in these respects from the countries that we have been assisting in other parts of the world. The challenge to find new ways to develop and utilize more efficiently the great educational system we have created, is equally great. The existing concept of vocational education is not relevant to these changing needs.

New Conceptions in Modern Production

The process of industrialization involves the continual extension of specialization of task. For most of the past century we have been reducing production functions to relatively simple tasks, and substituting machine energy and machine skills for human inputs. When this process occurred on a mass basis, in which specialized tasks were closely coordinated, we used men, either in the process of machine control or in those unskilled but non-routine functions where machines were too expensive to substitute for cheaper men. In this process we created millions of jobs with skill requirements that could be acquired in short training periods. We absorbed into these jobs those with low skill levels and a great transfer of displaced workers from agriculture.

The modern technology so important to industrial growth, is of a different order. It displaces a process and the complex of skills and experience related to it. It has moved the process of control from the individual machine to the machine complex. It requires a high level of education rather than training, and it has displaced an increasing number of the lower skill functions which have employed a very large proportion of our labor force. While skill requirements have changed in the past, these changes were limited to a narrow range of skill levels. This is quite different from the present condition.

Major Changes Within Work Force

The present pattern of change is evident in the occupational structure of employment and in the nature of unemployment. For example, if we look at the change in employment in the United States between 1950 and 1964, the total change was roughly 9 1/2 million people. This is an employment increase of 15 percent. The total increase in white collar workers as opposed to blue collar workers in the same period was 8.8 million people. The number of white collar workers increased at a rate that was equal to 92 percent of the total increase in the labor force. This does not mean that 92 percent of the new jobs were professional jobs, because clearly there were negative changes in other areas, particularly in agriculture and in the number of unskilled workers, but the change in white collar employment was equal to 92 percent of the total increase in employment. This constituted an increase of 39 percent in the number of white collar workers.

Within the category of white collar workers there are several levels of skill. They include professional workers, technical workers, clerical workers and sales persons. Within this group we have a similar pattern of change. The number of professional and technical workers which includes technicians, nurses, engineers, scientists, social scientists, and so forth, increased by 1.4 million, or an amount equal to 43 percent of the total increase in employment. This was an increase of 90 percent in the number of professional and technical workers. The number of clerical workers increased by 39 percent and they accounted for a net one-third of the total increase in employment. Sales workers increased by only 17 percent or roughly at the same rate as the increase in total employment.

On the other hand, the number of farmers declined by 3 million, the number of unskilled workers by 300,000, the number of semi-skilled workers increased by only 300,000, and the number of skilled workers increased by roughly 600,000. At the same time unemployment became increasingly long term, that is,

the number of people who were unemployed for 36 weeks or more became an increasingly large proportion of the unemployed. The majority of these unemployed were persons displaced from unskilled and semi-skilled employments.

Measuring Devices Crude

The process of projecting changes in occupational requirements over long periods of time are very crude, and they require at present a considerable tolerance for error. Clearly, this is because of the complexity of this society and economy, and in particular the nature of technical change. Even so, it is possible to make "reasonable" projections of an occupational structure, and these imply a continuation of the pattern of change that we have noted above. For example, in the period from 1950 to 1960 the number of draftsmen and technicians increased by 396,000 or 132 percent. The best estimate suggests that they will increase by another 65 percent in the next ten years. The greatest single change among occupational categories has been at this level, and this trend is likely to continue for some years.

Some authorities believe that the optimal occupational structure of the labor force would have a ratio of 2 to 4 industrial technicians per engineer. The present ratio is, in fact, the inverse, i.e. nearly four engineers per technician. Since the number of engineers increased by 330,000 between 1950 and 1960, a gain of 64 percent, the great potential increase in the number of relative technician functions is obvious. This is the most dynamic growth group in the labor force and a very large percentage of all future employment gains will be at this level.

As a second example, another large component of this major occupational group is the professional nurse. The number of nurses increased in the last decade by 200,000 or 46 percent. Assuming any expansion in the present program of medical and hospitalization insurance, this group will expand at greater rates in the next ten years.

Another major source of employment opportunities in the future will be in the demand for salaried managers and administrators. This occupational group provided more than 800,000 additional jobs in the last ten years and should continue to expand at the same rate. Although many persons entering this professional group have completed a university degree, a large proportion enter from secondary schools or with less than four years of higher education.

Education Beyond High School

As limited as they are, these historical statistics all suggest (when extrapolated into the future) that the great weight of employment expansion will be in occupations which require education beyond high school. The residual opportunities will be limited to skilled, craft jobs and certain sales functions. If they are accurate estimates of the future, they imply that limited vocational training directed toward the highly specialized development of functional skills will be of declining importance and, indeed, will fail to meet the real vocational needs of the society.

This failure is also evident in our present concern with chronic unemployment. Much of the present emphasis on vocational training, in the context of the "war on poverty" reflects a prior failure to anticipate change and develop new solutions. In most labor markets, we are retraining workers with very limited evidence concerning the future requirements for the skills they will acquire in the process. Frequently we are attempting to achieve a small measure of horizontal occupational mobility without regard to the evident need to achieve the maximum vertical movement. To retrain older workers for occupations at the same level may be all that is possible in view of the many constraints on mobility and the employability standards affecting older workers. It is obviously irrational at the same time to train young workers to compete in declining occupations.

New Context Needed for Vocational Preparation

Further, much of this traditional vocational training is directed toward workers who are unemployable for reasons other than skill. Although there is as yet only limited research evidence, there are indications that many of the long term unemployed do not possess the labor market skills and other capacities necessary to successful adaptation to job changes. Others do not possess the capacities and characteristics required for skill acquisition. It is only in the urgency of concern for the long term unemployed that we have become sensitive to the range of capabilities that are "vocational".

The implications of these occupational trends and labor market conditions are several. The level at which education should be vocational is changing. The nature of and content of vocational education is changing as a function of the change in level and for reasons associated with problems of labor mobility and labor market behavior. For both reasons, the role of secondary schools in vocational education will change radically.

An increasing majority of high school graduates will continue vocational preparation at a higher level. The preponderance of these will pursue professional, technical or management vocation, requiring a broader base of knowledge and understanding than is required by craft-skills and similar occupations. The principal vocational function of the secondary school is to provide this basis rather than specialized functional capacities.

One need in the present educational system is a great expansion in the number and distribution of post-high school technical schools with programs that may be but are not necessarily terminal. They are more relevant to occupational needs than a proliferation of general, junior colleges. The requirements on the secondary schools for specialized functional education can then be limited to those few areas of expanding employment which are supplied at the secondary level.

At this level, as well as for the larger number who will continue education, the content of education must prepare the individual for vocational change and adaptation to changing situations and changing requirements. It is interesting to note in this respect, that France has recently proposed to limit the certification of atomic technicians to a period of five years, assuming that the rate of technological change is such that in that period their skills will be obsolete. We have by other means followed a similar practice in regard to teachers, but there are few other examples in the American experience. We have generally assumed that an education is a permanent thing in an unchanging world.

Current Expedience vs Future Needs

I realize that in the face of what is said here, the secondary school is currently facing great pressure to expand rather than contract the traditional form of vocational training. It may well accede to these pressures, but it should at the same time move toward the future.

A second broad implication of these patterns of change is that the content of appropriate vocational education can only be defined in conjunction with all those who contribute to projections of the future - the physical and social services as well as the educator. Their skills should be brought to bear, together with educators, in appraising the current evidence of future needs and their implications for education. For example, a program of vocational education should surely be tested against projections of manpower requirements and social change. This will involve a greater communication among relevant disciplines than is now characteristic.

It will also require of the non-educators a great sense of responsibility to serve education in these ways. Economists are just beginning to develop effective techniques for projecting the oc-

cupational structure of manpower requirements and to relate them to educational preparation. Other social services can contribute to the process of developing the capacity to adapt, to see new opportunities and to respond to them. We need a concerted effort to extend educational capacity in this broader context of vocational education.

Several Goals for Education

A final implication of changing need is the increasing necessity of relating the vocational objectives of education to the other purposes of the educational system. For reasons already implied, no aspect of education can be purely vocational in the functional sense. Consequently there is a great deal of complementarity between vocational and non-vocational objectives. There are, however, some conflicts and these cannot be resolved until they are identified. Their identification and priority determination is one purpose of educational planning. Decisions concerning the choice of curriculum and technique should be made in the broad perspective of multiple goals rather than in the light of a narrow vocational need.

We need, I believe, to place greater weight on the importance of curricula design in the framework of prescribed educational goals and greater effort on improving the technology and thus the productivity of education in meeting them. The great stock of scientific knowledge relating to communication is applied in every other aspect of modern life but has not really penetrated into the classroom. While it has extended the range of experience it has not produced the larger classroom that vocational and other aspects of education for the future will require.

In this preliminary statement, I have shifted the emphasis away from the traditional aspects of vocational concern. This was not completely intentional. We have vocational problems of a traditional order in this society and we are approaching them in traditional ways. Perhaps this is all that we can do at the moment, but it will certainly not be adequate for the future. We have come to the end of vocational education as we have interpreted it in the past. We now face a new clientele, a need for a new product, and a much larger purpose than in the past.

Planning for an Effective Work Force

C. D. "Charles" Shannon as President of his corporation is keenly aware of the relationship of company survival and worker productivity. Located in the heart of the largest industrial complex in America, he is sensitive to the changes taking place in work. He believes the schools of America will design and operate a comprehensive plan both for occupational competence and enterprising citizenship and gives generously of himself in support of both.

It is a privilege for me to share in this conference, for I am very interested in the improvement and development of vocational education. I am pleased that the Educational Research Council has decided to launch into this phase of our educational program.

The Council has demonstrated ability to lead, to engage in research and development, and to be productive. I am sure that in due time the efforts of the Council staff and all others working with them will be productive in the area of vocational education. As I look out on the national scene there are few organized efforts that hold real promise to employers. In the breadth and depth of this conference plan I am beginning to sense something of significance; and this is encouraging to me.

To be asked to share under such circumstances, causes me to feel just a little bit humble. Perhaps I should admit, too, a little bit inadequate for so important a responsibility. I shall, however, do my best to outline some of the problems of management related to planning for an effective work force.

I did not select the topic for this paper. It was given to me. There is in the title one key word, namely, effective. This word gives me plenty of latitude for one short talk. It is very significant, and much of what I have to say will center on its meaning to management.

Vocational Training Limited

In recent months I have been engaged in a series of meetings and studies related to vocational education. What I have learned has confirmed many of my suspicions.

Factually it can be said that few public school systems in this state have instituted vocational education programs. It also can be said that few systems throughout the nation have instituted programs. Before the enactment of the Vocational Education Act of 1963, ten times as much money was spent in the United States on school lunch programs as on vocational training, and 45% of this was used to teach farming. In many areas where vocational high schools have been tried, they were found lacking in the quality of training necessary for advancement in employment.

Apprenticeships Drop

The availability of vocational education is not our only source of concern. If we examine the apprentice program we find a tremendous drop in enrollment. The number of registered apprentices in 1950 was 260,000. Today it is 159,000.

Look at the federal statistics for this program for 1962:

Active at the beginning of the year	155,500
New Registrations	55,400
Completions	25,900
Cancellations	26,400
Active at the end of the year	158,600

The rate of dropout in the apprentice program in 1962 exceeded the rate of dropouts in our high schools for that year.

As a manager planning for an effective work force this is not a very encouraging picture.

I am not here to complain or to blame. Unlike a few of my colleagues, I have no feeling that the school systems of America are at fault. When one examines the contribution of education to our national well-being, one can only feel a sense of great achievement. The school administrators, the teachers, the school boards, and the American people have done a remarkable job. Compare their efforts with those of any other nation on earth.

New Frame of Reference

We cannot, however, coast on past performance. Total expenditures on education have increased slowly in comparison to expenditures on public welfare. As a result, the Federal Government has enacted some emergency measures relating to vocational education, and appropriated hundreds of millions of dollars. The Federal Government has also enacted the Vocational Education Act of 1963 and I doubt that anyone yet understands the full impact of this measure.

As a representative of management I would like to spend just a little more time on the development of a frame of reference before I get into specifics. The specifics I want to talk about may have a different meaning if I fail to place them in a proper frame of reference.

School administrators in America, through their Educational Policies Commission, published a report in 1937 entitled "The Unique Function of Education in American Democracy." I would like to quote a few choice headings from Chapter 1 of this report. While I am reading let your minds run in free association.

"CIRCUMSTANCES CALL UPON EDUCATIONAL LEADERSHIP TO RECONSIDER ITS POSITION AND OBLIGATIONS IN SOCIETY.

"THE WORLD WAR PROFCUNDLY DISTURBED THE SOCIAL ORDER OF 1914.

"THE MECHANIZATION AND URBANIZATION OF ECONOMY HAD ALREADY RAISED PROBLEMS.

"SOCIETY HAD BEGUN TO SHIFT HEAVY BURDENS TO THE SCHOOLS.

"YET EDUCATION OPERATES LARGELY WITHIN THE FRAME OF EARLIER CONCEPTIONS OF SOCIAL NEEDS.

"SO ADJUSTMENT TO CONTEMPORARY CONDITIONS AND OPPORTUNITIES BECOMES IMPERATIVE.

"THIS ADJUSTMENT MUST BE MADE IN THE TERMS OF PUBLIC INTEREST.

"THE CENTER OF OBSERVATION IS IN SOCIETY, NOT MERELY IN THE EDUCATIONAL PROFESSION."

In respect to this last heading I must quote the body of the text that follows.

"It is not enough, therefore, to fix attention on professional conceptions of

education alone. Observations must also be taken from the center of society, for education, government, economy, and culture are parts of the same thing. Hence a paradox. If educators are to make wide and real the reach of their theory and practice, they must step over the boundaries drawn by their profession and consider the unity of things. By concentrating affections on their sphere of special interest, they will separate education from the living body of society. Important as are the methods and procedures of education, they are means, not ends; and the ends themselves are linked with the genius, spirit, and purposes of the society in which education functions, by which it is sustained, vitalized, and protected. Yet in stepping over the boundaries of their profession to find their bearings, educators are at the same time compelled, by the nature of their obligations, to hold fast to those values of education which endure amid the changes and exigencies of society."

In the conclusion of the chapter, five guiding principles are set forth by which to discover a position and chart a course.

"1. Public education is anchored in the history of American civilization and at any given moment operates within the accumulated heritage of that civilization.

"2. Every system of thought and practice in education is formulated with some reference to the ideas and interests dominant or widely cherished in society at the time of its formulation.

"3. Once created and systematized, any program of educational thought and practice takes on professional and institutional stereotypes, and tends to outlast even profound changes in the society in which it assumed its original shape.

"4. Any restatement of educational objectives and responsibilities which is rooted in reality takes into account the nature of professional obligations and makes adjustments to cope with the major changes wrought in society since the last general reckoning in education.

"5. Any statement of educational objectives and responsibilities that is not merely theoretical involves a quest for the institutional forms and operating practices through which education can best attain its ends."

In attempting to ascertain the ends of education I have turned to another report of the Educational Policies Commission entitled "The Central Purpose of American Education," published in 1961. I found these statements in the Foreword:

"Education must be interfused with the process of thinking and the attitude of thoughtfulness. Our commitment, therefore, is not to narrow and exclusive intellectualism but rather to a program of education which is suffused with creativeness and innovation.

"We most emphatically reject the idea that a few should be educated and that the majority should be trained. We say, on the contrary, that all have latent, unrealized powers of creativity. Our emphasis on thinking as a central outcome of education stresses the pervasiveness of rationality in all the purposes of education."

What are the purposes of education? Turning the pages I think I can sum them up briefly.

1. To develop the ability to think,
2. To develop a reasoned awareness of the value of mental and physical fitness,
3. To develop worthy home membership,
4. To develop vocational competence,
5. To develop effective citizenship,
6. To develop worthy use of leisure, and
7. To develop ethical character.

These are the things which guide you. Now let me turn to me.

When I was invited to make this talk I was told that you wanted to know what management in industry and business is looking for in the youth and adults who graduated from our school programs. Here I am as one from management in industry; one representative from the society with which you are pledged to work.

While I am very interested in the outcomes of education, especially those that have to do with occupational competence, I am not sure that I can make the statement that will be the final answer. I am, however, willing to offer my best thinking and to share in the discussion of the statement.

Corporate Work Requires Discipline

As President of a small corporation I can assure you that I am very close daily to what makes our operation go. The factors of successful operation are, in large part, common to small and large corporations. What I shall have to say will be, I believe, common to companies of all sizes.

As a manager I am aware that in our nation almost all remunerative work, except that of government, is done through corporate organization. The basic tool we use in the development and operation is a private capital dollar.

As a manager I must exercise the discipline through which the integrity of the private capital dollar can be maintained. Under our system this discipline is absolutely necessary.

Just as management must respect the discipline of capitalization so must the other workers in the corporate unit tender their respect. Every worker, regardless of his role, must be conscious that his efforts must fit into the discipline of the corporate whole or he cannot be used.

I am also aware that there is a business discipline to the operation of schools. You may express this in words different from mine but the truth is there nevertheless.

You and I have something in common. In administrative responsibility we cannot ignore the disciplines within which we work. In my business, failure to operate by this discipline can only result in disaster.

You and I might be compared to the public health officer who, knowing of the movement of a virus toward his community, went fishing instead of facing the problem with his people. Facing a problem may mean hard work. It may mean unpopularity for a spell. But failure to face the discipline required in a situation is a serious dereliction of duty. What makes the physician, the educator and the manager professional is the ability to face a problem intelligently and objectively.

This is the first requirement of management in planning for an effective work force. Having faced the question, one then can produce an analysis of the work which is to be done.

Machines or Men

When the work breakdown is completed, management then applies machines or human beings to it. In applying one or the other, the capital investment in the machine or worker must be considered. The machine or the worker may need further adaptations to reach the level where their productivity can be described as profitable.

The increased need for training in corporations demonstrates that most workers now enter work short of the requirement of profitable output. The rise of corporate spending for training raises many questions. This is one question which will not be resolved today. The people involved will probably want to air this question thoroughly before agreeing to any program. I am simply

sharpening this point in order that you might make a mental note to remember it.

I personally have some strong convictions about some of this training done within corporations. Some of the attitudes about work, profit, productivity, etc., in my opinion, need to be developed long before people reach adulthood, and these are now reasonable responsibilities to be assigned to schools.

A fundamental change has taken place in our society. No longer is the parent, or the craftsman down the street, the vocational educator of the day. On the contrary, the schools of America are being challenged to produce, for every person, a program of occupational preparation unprecedented in the history of our land.

You are here to face this question and so am I. You are here because your professional conscience tells you there is a job to be done. I am here to share what I can so that you might think about what I, as a manager, have to say about an effective work force. Let me then proceed a step further.

Profit Necessary

My first consideration as a person who operates a business for profit is that the capital dollars, to which I referred, be invested to produce sufficient revenue to cover the cost of wages, the benefits that go along with wages, the consumable supplies, the overhead, and the necessary profit. I repeat, necessary profit, for without it neither my business nor any other profit corporation can survive.

Digressing momentarily, even government would feel the pinch if corporate business did not realize a profit. In 1964 the Department of Commerce reported that Uncle Sam took 45% of the profits, and this totaled more than 22 billion dollars. Approximately one third of corporate profits were paid as dividends. Profit is not bad. It is an integral part of our operations and must be respected by all workers.

Productivity of Individual

In its operation, a corporation spends for many things. The most variable item in a corporation such as ours is labor. It is not the rate of wages per man hour about which I am talking. Rather it is the productivity of the individual person which varies. Perhaps I should not bring up this question, for in some circles this is a delicate matter. To some people it is nasty to even suggest that the productivity of workers should be considered. All I can say to you is that within the conditions of corporate work it cannot be ignored. It is the factor that most affects the cost of whatever corporations have to sell. In planning for an effective work force, management must select the people who have the productivity or, at least, have the potential for productivity.

The productivity of each worker must be measured in terms of quality and quantity. This is not always easy to measure but nevertheless measurements must be made. When workers become productive they do not object to measurement. In fact, I think most good producers like to be measured.

I would like to make it very clear that as a manager I am not trying to bulldoze or be punitive to any person under my supervision. As a worker, neither do I want to be unfair to myself. What I am trying to explain is that every person in corporate work must be conscious of the productivity rate of his efforts.

Why is this so important? To determine the price of our products, we must consider, in addition to the cost of direct man-hours, the cost of benefits. In round figures this adds up to a minimum of 14% of the man-hour cost. Included are paid holidays, insurance, vacation pay, coffee breaks, state and federal unemployment compensation insurance, and the employer's share of the federal old age survivors insurance. These are musts and in certain instances it is necessary to add other items.

In addition, consider the impact of absenteeism on productivity. Keep in mind that I am not here to complain. I am only talking about the facts of life in a production shop operating within the discipline of corporate work.

One must recognize, too, that the best organized plans do not always pan out. There are bad days in the plant. The source of the trouble on these days may be within the corporate organization or outside. It may even be both within and without. In other words, human performance, within or without, sometimes fails. The ups and downs must be absorbed and, in the end, productivity must be profitable. Hourly rates are not reduced on these bad days but the productivity loss must be recognized.

Discussion of this point suggests that the roles of lead personnel, foremen, supervisors, sub-managers and managers be considered in vocational preparation. Organization of work and coordination of the total productive effort are aspects of education that cannot be ignored.

Human Motivation

To the list of factors which relate to worker behavior add lack of interest or lack of motivation. Teachers in the elementary, secondary, and college classrooms have this same problem. With a chuckle, management could probably blame the teachers for graduating their problems to industry and business on the assumption that somehow we can work out the problems. We may work out a few behavioral problems but more often we have to solve them by termination of the work arrangement.

In planning an effective work force, management is essentially planning a productive work force. To have to contend with a host of behavioral problems, especially some we are not organized to deal with, forces us to look for solutions elsewhere. We are looking to the schools for many of the solutions and we are hopeful that schools will be able to go all out in the development of programs of preparation for occupational competence.

Minimum Qualifications

Before I move to the next phase let me summarize what, in effect, I am saying to you. The rock bottom qualifications of a worker at any level, or in any kind of work, is reasonable adjustment. Add to this some insight into the nature of how corporations function, a desire to learn, some maturity in his enthusiasm, and a sense of ethical responsibility. Referring back to the quotations from the Educational Policies Commission, it would appear reasonable for me to expect the school to assume seriously, and with public support, responsibility for achieving these minimum qualifications of workers.

How best to achieve these minimum goals I will leave to you and others. I will say, though, that management is interested in the achievement of these goals and would be willing to support your efforts to realize them. The fact that the schools do some very good work with the cooperation of some of the parents should not be ignored. What we are, in effect, saying, is that we would like to see these characteristics in a very large percent of the graduates of our educational programs.

Now let us turn to the question of specific skills and abilities for specific jobs. Finding workers with these specifics has rapidly become a very serious problem. Management has found it necessary to engage in extensive training or to proselytism in order to man their jobs. The cost of this training has to be covered by revenue from production. The company engaged in training, sooner or later, may find that competitively it has priced itself out of the market.

The major part of these specific skills and abilities could be included in the programs of the schools. I am not suggesting how they should be administered, but I am suggesting that prepa-

ration for specific skills and abilities, common to the needs of industry and business in a given area of work, could well be incorporated into the educational program.

In the past, some of this has been assumed by the vocational programs. The extent of these programs is far too narrow in the light of today's needs. Many of the programs started decades ago are now obsolete and might well be terminated. Some are being terminated.

Realism Necessary

In dealing with specific skills and abilities there are many people of prominence who are saying, in effect, you have to have a college degree to go to work. These people seem to be trying to outdo each other on this statement.

Certainly we need all the college education and even advanced education we can give, but this is not how management faces a work assignment.

Management is very conscious of the need to analyze the work and to organize it according to specific skills and abilities. It is ridiculous to pay $10 an hour in direct labor for work that currently should not cost more than $2.50 an hour. Corporations survive on their ability to appropriately assign the work so that costs do not get out of hand.

Even with numerical control, the same principles apply. As school administrators you know that the return on the cost of training varies considerably. This is true even when professionally trained educators do the job. When the training is done by non-professional educators the return on the investment is less. For this reason, too, I think it is reasonable for management to look to the educators to do the job.

Proprietary Training

When it comes to certain specific skills and abilities peculiar to a corporation, I doubt that we will be asking the schools to do this preparation. On the contrary, we might arrange privately for educational, psychological, engineering, or other personnel to assist us in doing this training. This is a kind of training we can well afford and some of it may even be proprietary.

The general personal development and the specific skills and abilities common to a work area can best be assigned to the educators. When we recognize that some of our efforts at training are in vain, either because of lack of interest on the part of the employee, or because he thinks that it is beneath his dignity to take instruction from persons not trained as educators, we must recognize that we are not skilled in human behavior or learning. I would dare a comment that it is too late to wait until the final days to change many of the attitudes which are manifest in people who apply for work. I would think you must start as early as possible in building attitudes and insights.

You can rest assured that experienced management weighs heavily the question of who shall be trained. The investment is not likely to be made unless the returns from training promise a greater productivity in the worker and can be justified to the corporation.

The customers of our corporation pay only for quality merchandise delivered on time at a price competitive with others offering the same service.

In the last ten months our company has hired twelve new persons. Only six of these remain in our employ at this time. Only one of these six can be rated as top skilled. Two others show promise and in a reasonable length of time will become skilled. With such a poor proportion of return you can see why we are interested in a professional preparation job being done. Our troubles are general in industry and business and I'm sure you'll find a readiness to work for some relief. With joint concern, management in industry and business and the educational leaders could do much to solve the problem of worker attitudes and worker productivity.

I am not unmindful that home, too, plays an important part in attitude formation and I am assuming that our educational systems must also take into account this factor.

It is important, too, that I make it very clear that I am not restricting my remarks to workers paid wages or commissions. My remarks apply to all workers in corporate work and I would think should apply in all remunerative work.

As I reflect upon our industrial and business development in America, I become conscious that much of our program has been the outgrowth of our efforts to overcome adversity. We have become affluent, and business is presently doing well. It appears we want everything we can get for our offspring and that we frown on the thought that any of them should toil or struggle or learn to deal with uncertainty.

I am not suggesting that we return to the horse and buggy days. On the contrary, technological advances have brought new days and new ways. They promise even better things.

Attitude of Management

Management in American business and industry has become, in recent years, more and more interested in the improvement of individual productivity. William Blackie, President, Caterpillar Tractor Company, in the foreword of a 1963 publication of the American Management Association states the concern very precisely. I quote:

"The business executive's major objective is to achieve a better ratio of output to input in each element of business activity; that is, to make each element more profitable. This may be done by increasing the output or by reducing the input, and increased profit resolves itself in simpler terms to 'more for less.' The answer is productivity, and it finds its most common expression in terms of output per man-hour.

"Money is only the common denominator or measure of the elements which go into the productivity equation. The basic causes of productivity lie in factors which go beyond their purely economic aspects insofar as they deal with the utilization of time. But time is of significant value only to people, and any study of productivity becomes, therefore, one in which the factors of production are related to people at work. The matter is, accordingly, one which must necessarily encompass human relations."

The reason for Mr. Blackie's concern is found in a later paragraph in the same foreword. I quote:

"The authors also show a keen appreciation of the importance of productivity as a broader matter of business survival, and they extend their thinking to its effects upon the economic vitality of a nation and its individual citizens. In this way they bring out the undeniable fact that gains in productivity convey benefits far beyond the immediate improvement upon a particular job. Furthermore, they recognize that in the increasingly competitive world markets of the near future the race is going to be won by those who can best utilize all the resources at their command. This is already becoming apparent in many industries which are finding that if they cannot gain strength through their own ability to export, they will surely be weakened by competitive imports into 'third' and even home markets. From such facts the authors develop well the significance of the manager as one whose business is improvement. The job is not to spend less but to spend more - provided it be more productive."

In planning for an effective work force, management in industry and business will look in every conceivable direction for assistance that is needed. The discipline of corporate work teaches the manager to plan with care. As an officer he is not benevolent. On the contrary, a successful manager is crystal clear in all phases of the discipline of corporate

work and when he hires people he does so with this discipline in mind.

In planning for an effective work force one starts with an examination of the work the corporation will be doing. It is necessary to recognize the minor or major adjustments in procedure that must take place. In addition, the corporation may be planning on developing one or more new work areas.

Obviously, management will utilize its existing staff as much as possible. It may be necessary to upgrade staff to keep the corporation highly productive.

In filling most vacancies and new positions, recruitment will be done outside the corporation. Whenever we are hiring into the corporation our concerns grow. Few of the people who are interviewed have had any preparation for entry into the field of work. When I say "few" I mean far less than 1 out of 5. What concerns me even more is that very, very few of the people have any insight into or appreciation of the discipline of corporate work.

I am sure that what I am saying will apply to most employers in industry and business. Add to this the attitudes expressed and the manifestations of abnormal behavior of the applicants.

Employers have become concerned, and their concern is not confined to any graduating group. Some employers blame the schools and colleges. I do not. I take the position that our vocational preparation programs have been nonexistent in most schools and very limited in others. Employers have no grounds to complain about schools until they have given support to the development of a comprehensive program of occupational preparation for all youth and adults.

In planning for an effective work force it is necessary to examine the total job to be done. Management, sub-management, supervision, and other workers must all be included. In addition to this breakdown by levels of responsibility one can divide the work into major classes, from sales and contract procurement on the one hand, to charging the customer for products manufactured or services rendered on the other. Some of these kinds of work are harder to man than others. As one examines the problems of manning each kind of work it becomes apparent that business and industry have a few problems to face up to. Take sales for example. This work is becoming more and more complex. It is important to the company and it is essential. A part of our sales practice in this country has slipped to a low ebb. This part makes the newspapers quite steadily. This bad part seems to contaminate sales work and increases the problem of procurement of persons for this work.

The problem of recruitment of sales personnel goes far beyond the bad side of the problem. Sales have largely been remunerated on the basis of a commission. It is hard to find people who will venture into such a basis for remuneration even when the rates of return are promising.

In planning for an effective work force all is not good and all is not bad. We do have a serious problem to face if we are to keep competitive. Many changes in work have taken place, and we have not adjusted fully to these changes. Additional changes are taking place, and more will obviously take place. The lag should not alarm us.

I am pleased that the Educational Research Council has moved into the field of occupational preparation. Somehow or other I hope some financial support will be forthcoming so that a comprehensive study may be made.

When a plan has been blueprinted it should be possible to proceed in an orderly way to provide the educational program necessary for the occupational preparation of all youth and adults and to assume that industry and business in Greater Cleveland can flourish.

Vocational-Technical Education in the Light of our Knowledge of Human Behavior

Ralph H. Ojemann - a national leader in the field of child behavior and development. Well known for his contributions in the fields of educational research, psychology, mental hygiene, family relations, and school administration. Keenly interested in successful work experience as a means to mental health, his theory of "causal orientation to the social environment" may have considerable bearing on the problem of improved productivity of workers. A graduate of the University of Chicago, Dr. Ojemann was awarded the degree of Doctor of Philosophy in 1929. Presently he is a professor in the Institute of Child Behavior and Development at the State University of Iowa. He also serves as Consultant to the Educational Research Council.

To formulate the suggestions that behavioral science has to offer for the area of vocational-technical education and in particular for the problem of developing a creative adaptable work force it is helpful to begin with some basic behavioral science knowledge. Behavior can be thought of as a product resulting from a motivating force interacting with the available ideas, skills, intelligence, emotional patterns and energy which the organism possesses at the moment. In other words, we can think of behavior as a resultant of an interaction of several factors. A convenient way of conceptualizing the factors underlying behavior is to think of some nervous impulse or force which is set up in the nervous system and this force is processed through the system into action utilizing the organization of the system at that time. The organization of the system can be thought in terms of skills which the organism possesses, ideas it has developed, attitudes that have been formed.

Among the motivating forces operating in human behavior, we can list a number pertinent to our discussion here. The individual is so constructed that he can develop feelings of insecurity in certain situations, these feelings are unpleasant. He will use whatever resources in the form of ideas, skills, energy that are available to him to remove the feeling. Similarly, there are feelings of self-respect, personal worth, amounting to something, being an individual in one's own right. There are hunger feelings, sex feelings, and impulses to activity.

The problem of life is to find methods of dealing with these feelings that will help the individual to continue to live with others and with himself throughout life. Each of the feelings can be satisfied in many different ways. Each of the alternative ways tends to have certain effects. The problem is to find those ways that tend to have the effect of enabling the individual to continue to develop.

Productive Work Meaningful

One way of developing a feeling of self-respect or of being an individual in one's own right is to do work that is recognized as productive, work that is challenging. Other ways of achieving a feeling of amounting to something are to dominate others, to push others down, to develop some special skills or abilities having value in the culture in which the individual lives. There are many more ways.

The individual who through a combination of circumstances inherits more material resources than he needs to buy his life necessities and luxuries does not have to find a job to live as far as his food, clothes, and shelter are concerned. But he may find that merely spending money given to him is not challenging unless he can understand the special contribution he is making. Thus, even the multimillionaire, unless he finds some way to make a productive contribution that is in his own right, may become frustrated, bored, or "fed-up" with life.

It thus appears that most everyone in order to continue as a person of self-respect and personal worth and not only to meet the basic necessities of food, clothes, and shelter has to find some work--some way to make a contribution that he feels is wrought through his own efforts.

Work Defined

By work here is meant some activity which the individual carries on for some extraneous reward. This extraneous reward is not necessarily money. These may be non-remunerative work. The extraneous reward may be money, satisfaction in having helped someone or done something for someone that the individual considers significant. In contrast to work, play is something that is done to amuse oneself. Work is effort expended in doing or making something. There is "a something" other than self-amusement.

The sense in which we are using the word "work" includes mental labor as well as physical labor. When we say that each individual has the problem of finding some work we do not mean manual labor only. The college student has the problem of finding the avenues through which he can achieve significance in his own right and as we have seen one of the common avenues of achieving this is to make a contribution that he feels is wrought through his own efforts. Work is one of the avenues through which the individual can develop himself as an individual.

In order to achieve the satisfaction of being an individual of significance in one's own right, it will help if the work the individual undertakes is something that he can learn to do well. If he selects something that he cannot learn to do well he will tend to meet an increasing amount of frustration. Thus, each person has the task of becoming aware of his own abilities and interests--of what he can learn to do well--of finding himself.

Discovering Talents

In addition to finding what he can learn to do with competence, he has to be able to see the significance of whatever work his talents suggest that he can learn with competence. If he does not feel the significance of the work he has chosen, if he does not see how it fits into the scheme of things and what contribution it makes to living, he may not be able to achieve the self-respect or personal worth which his personality growth appears to require.

Thus, we have already two suggestions for a program of vocational-technical education. Young men or women have to be helped to find their talents--what they can learn to do with reasonable competence. They also have to learn enough about occupations so they can see how what they can contribute fits into the pattern of development of society. Unless one feels the contribution that his work makes to the development of himself and others, he cannot achieve a sense of being an individual of significance.

Occupational Changes

The matter of learning the contribution an occupation makes as well as the finding of one's talents is complicated by a fact with which we are all familiar; namely, that occupations change, sometimes change rapidly, and their role in society may change. The role in society may change so extensively that a whole occupation or group of occupations may disappear. In some cases the demand for an occupation may decrease almost to the vanishing point only to reappear again at a later time.

We are familiar with changes. The problem is how can a young person develop pride in his work if he has to prepare for its decline or disappearance? Somehow we have to incorporate into our scheme something which will help him understand what the potential changes are, why they occur, how he can see them coming and not only prepare for them but take advantage of them. Somehow being aware of changes has to become a challenge rather than a prelude to defeat if the individual is to grow in self-respect and personal significance. To wake up one morning and find that one's work is no longer needed obviously can be a serious blow to the young person's sense of worth.

To solve this problem, our knowledge of human behavior, both that of relating to individual development and to societal development, suggests some possible approaches. To understand changes, why and how they occur and how to prepare for them, it seems very helpful if we start with the basic contribution a given type of work makes to human development. It appears helpful to keep in mind that every occupation arose, developed, to provide something that men felt they needed or desired.

For example, consider the carriage maker of some years ago. For what purpose were carriages developed? What problem in human development were they designed to help solve? The basic problem was that of transportation. Carriages made it possible for people to get around with less energy and greater speed than by walking. Man felt less bound by--less at the mercy of--the physical distances in their environment. Man's security, sense of accomplishment, were involved in achieving freedom from or control over physical distance. The carriage maker, the harness maker, the livery stable man all felt they were individuals of significance.

But the motivating forces and the abilities of man including his imagination and intelligence which produced the carriage were still at work. Man's imagination could conceive of still greater freedom from the constrictions of his physical environment. He could in imagination see greater security and greater power if he could extend his conquest over physical distance. Thus, came the motor car, the propeller plane, the jet. He, who today or at any other time, past or future, has a job somewhere in the transportation industry needs to appreciate--to feel--the nature and significance of the basic problem of man's struggle to free himself from the constrictions of physical distance.

Learning to Live with Change

But what is more, it appears quite plausible that the worker could be taught in such a way that he will feel a challenge in helping man to solve this basic problem--in having a part in working toward an ever more adequate solution of man's problem, in doing his bit to help to free the human spirit from the barrier of physical distance. What I am leading up to propose is that in vocational educational training that there be in there something which will help all children to learn what these basic occupations are for.

But all of this raises at once a difficult question. Usually only geniuses can invent. And today much of investigation requires resources in money and materials that the vast majority of individuals do not have. It will not be too difficult to suggest educative experiences to develop an appreciation of man's basic problem in highly intelligent pupils. What about the vast majority of individuals?

Lag in Education

It seems to me these questions come about largely because we have not really wrestled with education for change. There have been many conflicting pressures. We are all familiar with the craftsman who assumes that somehow hand finishing is superior to machine finishing. I suspect that in some cases it may be. But I also suspect in some cases that the craftsman himself derives so much satisfaction from the finishing activity that he is reluctant to give it up. But this does not mean that the product is superior or that the craftsman cannot find other methods of continuing to build his sense of significance.

Some of my photographic friends used to think that the light meter was inferior to the human ability to estimate light intensity. It is quite possible that it was when it was used without intelligence and skill and it is quite possible that the skill in estimating light intensity which they had developed over a long period of trial and error was of a high order. But this does not indicate what the artist plus the light meter could have developed nor does it recognize that the ordinary individual feels some inadequacy and frustration when he has to work without a light meter. Similiarly there were bound to be, there have been, and there will continue to be changes in the direction of making it possible for the ordinary individual to use a camera to record objects and events with more feelings of assurance and reduced frustration.

Change is Needed

Changes are not capricious. They arise from man's attempt to live--to free himself from constriction and detail. In the process of finding more satisfying methods he may make mistakes and have to back-track. But this does not alter the basic underlying trend.

This view of occupational change is interesting when viewed in the light of the often reported nostalgic reactions to the old home town. Instead of looking upon the town as "the old place isn't what it used to be" or "it is all so strange" it could be looked upon as a place where people have been living and striving for more satisfying ways and then seeking with interest an answer to the question "how have they been getting along in their attempts to live more effectively? What changes have they made and how have the changes helped them?"

Note what we seem to be leading up to by way of educative experiences. Suppose in social studies and elsewhere in the curriculum, pupils studied not only <u>how</u> man lives in different parts of the world or <u>what</u> changes he has made, but suppose there was a good dose of <u>why</u> the changes were made, what stimulated the changes, what basic problems were the people under consideration trying to solve, how effective have their steps to date been, and what might be the next steps? This means that since an important part of vocational-technical education involves education for change and since the social studies and related parts of the curriculum of the regular high school are the logical places for the study of social change an integral part of vocational-technical education is a social studies and related curriculum that helps all children--college bound and employment bound--to understand the elementary forces underlying change, to understand the dynamics of human development, to understand and appreciate man as he develops.

Lesser Ability People

But the problem of the lower ranges of intellectual and thinking ability is still with us. Granted that all pupils as they go through elementary and secondary school begin to think in terms of the forces in human behavior and development, what about those who can not go very deeply in their understanding?

It seems to me it would be feasible to have in the plant, in the union, in the adult education program of the community, persons trained as adult educators who could become thoroughly familiar with the problem in depth and through small group discussions and small group conferences teach all workers the elements of changes that are appearing or are beginning to appear and help each one in understanding, retraining, relocation, whatever is needed. The strategy here is that of any good teaching—begin where the learner is and devise steps which are at once challenging to the learner but not too great to induce continued failure. Through good teaching even the low in I.Q. to an extent can become aware of the elements of the problem of change as it affects their work and can see the need for guidance by their teachers and counselors into other ways of performing the work or into other types of work if the need for the particular activity under consideration is disappearing. Please note that this teaching and guidance would take place on the job, in afternoon classes, in evening conferences.

We thus have a sequence in the education for understanding occupations and the changes they undergo. Beginning in the elementary and secondary school there would be experiences concerned with learning about the nature and purpose of work in man's development, the major families of occupations, and the method of thinking of occupations as representing basic problems which man is trying to solve with continued development and try-out of more satisfying methods for solving the problems. Before the child gets very far in school, he would be thinking of occupations as ways of meeting societal needs which have the potential of continually evolving. These experiences would be provided for all children.

Thus as each individual finds his talents and enters upon an occupation there would be adult education facilities in his plant, in his union, in his community to help him to continue to grow with the occupation.

Leadership Lag

Under such an arrangement, there would be less likelihood that society will be caught with a severe shortage of technicians or other types of workers. Venn in his American Council on Education report points to a very critical shortage of technicians in a variety of fields. This should never have happened. It may be an indication of lack of leadership in analyzing the basic nature of occupational preparation.

What we have suggested so far in vocational-technical education is essentially general or liberal education. Every child would learn the purpose and nature of work, the basic idea of the evolution of occupations, the importance of continued growing with the occupation whether this be on the semi-skilled level or the professional level or at some point in-between. What we have suggested so far is for all children college-bound or not. This is also true for the professions.

Specific Skills

There are two additional aspects with which we have to deal before we can outline a suggested program for developing a creative, adaptable work force. What about the training for the specific knowledge and skills which a given occupation represents especially the training of technicians? The second aspect relates to the question of human relationships of the worker. It has been said that more people lose their jobs because of failure to get along with other or because of emotional conflicts at home or in the community. We shall review each aspect briefly.

First, what about the training for specific skills. It appears that as occupations become more technical they require more in the form of specialized knowledge. To service electronic devices, such as TV sets, computers, various control systems requires additional basic knowledge of physics - of electricity. An instructor in auto-diesel technology put it this way: "When the students first come into my class, they think they are going to get a straight course in auto mechanics. Actually what they get is a laboratory course in physics." It seems to me one has to be careful not to prolong the preoccupation with theory with the result that one doesn't have time to get fully acquainted with the application of theory as it is represented in the appliances which at that moment are in use and have to be serviced. But it appears that while there are some occupations for which the specific skills can be taught in a short time, occupations seem to differ widely in this respect. The learner needs both the underlying theory as much as he can functionally learn and the applications as they are represented at the moment. This simultaneous growth in both theory and application will have to continue throughout life. It appears that one of the mistakes of the past has been to neglect the growth in theory after leaving school. You've got theory and you've got application. In some of the material Dr. Hamilton sent me, he pointed out that in some studies it has been shown that there is a fairly high proportion of college graduates, high school graduates too, but college graduates who had so much liberal education that they weren't prepared for any particular type of occupation. I think we have to get some kind of a combination here of growth in the theory and growth in the application. The applications grow at the moment, and pretty soon there will be some new applications, etc. In the training that is given to auto mechanics for example, there is a great deal of emphasis upon the applications at the moment, but along with that, to appreciate the significance of the occupation, it seems to me that it is important for the individual to grow in some of the basic aspects there again.

One problem in providing this specialized occupation is the cost of equipment and instructor as it pertains to several of the vast varieties of technologies now represented in our society.

Since as we have seen a goodly portion of vocational-technical training involves liberal education, it may be that while the pupil is getting his background material in the purpose and nature of work in his high school curriculum, it may be helpful to have him spend part of the day at a technical center or institute for the specialized training. In view of the considerable cost of equipment and staff for several of the technologies and in view of the importance of including the basic material on occupations and occupational changes, it may be that we should have high schools in the respective districts, as now, but with technical institutes each serving several or a good many high school areas. In any one high school there may not be many students for any particular technology. Also it may not be possible to have all the technologies in the same building. A system of technical centers each including one or more technologies and each serving the students from a large area of many high school districts may be helpful. While this problem has come up in vocational education, it is not unique to vocational education. It is just because we haven't recognized it. Now let me give you an example of what I mean. Suppose you have in your high school a child who is unusually gifted in writing. Now what would help that writer would be to be able to work with other writers, get their criticism, bat ideas back and forth, etc. O.K., it seems to me that some day we are going to come to it where highly talented individuals in all areas will have some kind of arrangements where the individual high schools will contribute students to these special centers. A similar problem exists with respect to any specialized talent whether it is science, mathematics, art, music, drama, writing.

Continuity

The particular aspect of this problem that our knowledge of human behavior and development suggests is not to separate or divorce completely the technical institute from the high school or community college. The education in under-

standing work, changes, and so on cannot all be done at once, then dropped and the specific training in the technology take over. Both have to be continuous in school as well as after the so-called school years. A more developmental arrangement for the latter years of the high school appears to be having the student part time in high school and part time in the technical institute.

No doubt there are many other aspects to this problem. I am presenting it from the standpoint of the development of the worker as viewed in the light of our knowledge of behavioral science.

The other question we have to consider before bringing this together is that of the relations of the worker to his associates on the job, to his family and to himself. Interacting with others involves learning to understand and appreciate others, learning to consider alternative ways of dealing with situations and to examine alternatives in terms of their immediate and remote consequences. There is evidence that it helps a person in developing more satisfying relations with others if he can understand and appreciate the forces operating in the human situation. He can learn to understand more about the feelings and problems of others and about his own feelings. He can learn more about how to work out the daily interactions in ways that help himself and others to grow.

In this area, also, there is evidence that such education in behavioral science can profitably begin in the primary years and continue through the secondary school. It seems quite reasonable that it continues throughout life. The basic contribution of the education in behavioral science is to assist the individual in solving the daily problems in relationship with others and in guiding his own development.

Worker Security

An individual who has learned constructive methods of achieving and enhancing a feeling of security and self-respect in his daily living will have less need to use such methods as displacing aggression on the machine he is operating or on the foreman who supervises him, or escaping the problem by going on a binge, or other non-constructive methods. If we combine in the same individual the ability to solve the daily personal problems, a feeling of significance in the work he is doing and provide for him a work environment in which there is mutual understanding and appreciation between supervisor and workman, we have a powerful motivation for productive work. There is a variety of evidence which supports the favorable effects on production of such conditions as planning with the worker, seeking his suggestions, working with him as a person in his own right.

Defining Vocational Education

Before we bring together the various suggestions we have touched on, it may be helpful to ask at this point, what concept of vocational-technical education have we been assuming. What is our definition of vocational-technical education. A partial definition would run somewhat as follows: Vocational-technical education is that part of human development which has to do with finding one's talents and using them to make a contribution to society for some essentially external reward--some reward other than one's own amusement. The contribution is made with such competence and with such understanding and appreciation of the significance of the contributions as to enable the individual and others to continue in development. In this definition, I have implied that there is a kind of continuum extending from elementary skills, or through vocational-technical skills and on into professional competence. There are differences in the amount and kind of preparation they require but they all require learning the purpose and nature of work, finding one's talents, developing a facility for continued growth and learning the elements of personal development. Thus, in a very real sense, they are all related.

It may be helpful to keep our goal in mind. We are thinking of all persons, rich or poor, male or female, intellectually high or low. Our concern is to assist these persons to find their talents and to become motivated to make proficient use of their talents. We are concerned, too, that each person feel his work is purposeful to society and to himself.

Educational Ingredients

One ingredient of an educative program to achieve this goal is of experiences - readings, observations, laboratory exercies - to understand and appreciate the purpose or role of work in society and in their own lives. This involves some elementary economics, some elementary sociology, social psychology, anthropology.

It involves a study of the effects of productivity and lack of it on the vitality of a nation and the individual citizen and ultimately on the vitality of mankind. It would involve a study of the effects of the expenditure of human energy in conflict, worry, serious frustration, boredom, inefficient methods versus its expenditure in challenging and constructive work.

This would be for all students. It would expand as the pupil grows in his specialized knowledge and skills.

Is this vocational or technical education, or is this general education? Should this be in a separate vocational or technical institute or in the general school? We will deal with this point later but, I think, the answer is obvious.

A second ingredient is an elementary understanding of and an appreciation of the major types of occupations - the major types of ways in which man is attempting to use work to help him live. This should include professional as well as skilled and semi-skilled occupations. It should include research, basic research, developmental research as well as occupations using or applying the findings of research. If you take a broad view of man's work, you can identify two types of occupation: 1) research, 2) applications of research. It should include occupations for women as well as men. It should include the homemaker as well as the lonely mining prospector. Each of these major occupational groups is to be examined as to the basic role it plays in the development of man. One of its purposes is to develop an appreciation of different types of work so as to put the student in a better position to match his talents with the occupational families. Another purpose is to develop an appreciation of other people who are in different occupations.

Is this specific vocational or technical education or is this general education? Is learning about the major types of work man has developed to help him live humanities, classics, science, social science? I think the answer is clear.

A third ingredient of a program of education for competency in work is a sequence of experiences to find one's abilities and interests or rather one's potential abilities, skills, interests. It is especially important that each person identify the abilities or skills that can be developed to a degree of competency that is saleable in the market place. Learning to find what one can learn to do well begins in the elementary school, and it appears that it can be developed to a much higher degree than is not generally the case by the time the student gets through high school. It appears that in elementary school the pupil can begin to examine his abilities and interests, can learn to take the initial steps in guiding his own development. This can be extended in the high school.

There isn't time here to develop the methods in detail, but it may be helpful to point out that if we combine the search for individual talents with a study of the major families of occupations including the research occupations as well as the applied occupations, the pupil will be in a good position to begin matching his talents with the requirements of various occupations.

A fourth ingredient is the provision for acquiring the specialized knowledge and skills which a given vocation requires. The need for this we have pointed out as well as the merits of technical centers integrated with secondary schools or community colleges. These centers providing the expensive facilities and training for the student should be used while he is continuing his growth in understanding the social significance of the increased knowledge and skill he is acquiring. His understanding of the social contribution of his work grows along with his increased knowledge and skill.

A fifth ingredient is an arrangement through which each individual can keep pace with the developments in his field, can become sensitive to the direction of change and be able to grow along with change. You will note that I did not say prepare for changes. I would suggest something more. I would suggest sensitivity to changes, some understanding of the forces operating to produce changes, being able to see them coming and in small or large way having a part in them. Thus, one doesn't wait until the new product is developed or the changed procedure is in operation before one becomes concerned with it. One is aware of what is going on.

The forces operating may be difficult to understand. There should be someone who can simplify and explain. The workers in a plant could have someone who discusses in group sessions the forces at work and the developments which they foreshadow.

As we go down the scale in ability in abstract thinking, more of such interpretive help will be needed.

Growing along with changes requires teachers in adult education programs who understand the general economic, the specific technical, and the general human behavior aspects, so they can interpret the developments that are taking place.

And if the changes foreshadow a reduction in the job, the workers will see it coming, they will understand why it is coming, and they will be helped to prepare for another type of work.

A sixth ingredient in an education for competency in work is an understanding of the nature of the problem of daily adjustment, an understanding of the nature of feelings, of alternative ways of working them out and examining alternatives in terms of consequences. There is a body of elementary behavioral science which can be used to develop an understanding of one's behavior and the ability to use this insight in guiding one's own development.

If the daily problems become too complex, the pupil can learn that this happens to most everyone, he can be aware of the temptation to use the methods which get immediate results at the expense of the long-term interests of the organism and he can learn to get help with emotional problems much as we have learned to get help when physical illness strikes.

The six ingredients taken together suggest little place for vocational-technical education divorced from general or liberal education. At the same time they do <u>not</u> admit of a general so-called liberal education which does not help the individual to understand the purpose and role of work in human development, which does not stimulate the individual to find his talents, which does not assist the individual to develop his competence so he can make a significant contribution to social life. Vocational technical education is similar to language arts education, or science education, or physical education. It is one part of the total development of man. We do not think of putting language arts education by itself or science education by itself. Why should we put vocational-technical education by itself? While the individual is extending his understanding of the technical knowledge and technical skill, he must also <u>continue</u> to grow in the appreciation of how the use of this technical knowledge and skill fits into the total scheme of things. The technician does not live by skill alone. The skill must have significance and grow in significance for the individual and others if self-respect and personal worth are to be enhanced.

All Work Has Value

The six ingredients also suggest that to think of vocational-technical education as something of inferior grade, as something for pupils of low I.Q., as something not up to academic standard is quite in error. Learning the purpose and role of work in human development, finding one's talents as we have used the term here certainly need not be learning of inferior rank. To be sure the professions as we ordinarily think of them generally require longer training, greater intelligence, more ability to do abstract thinking but basically they are no more essential then the technicians. Where would the doctors be if their cars were not running and what of the teachers if there were no school buses?

It may be that the problems involved in vocational-technical education often in the past have not been analyzed thoroughly or deeply. It appears that some of the basic ingredients have been overlooked. It appears that the study and teaching of vocational-technical education especially in its basic aspects has often been superficial. One cannot develop a creative, adaptable, motivated work force if little attention is given to the question of how the specialized knowledge and skills fit into man's development. Some years ago, I used to wonder what would happen to the students in vocational agriculture who were putting all their efforts in learning how to produce and giving little or no attention to the basic economics of production and surplus.

But all of this is not intrinsic or inevitable. It can be changed. We need capable minds who can analyze the problems thoroughly, skillful writers who can prepare materials for study that are of high literary quality, and a general public that has developed an appreciation of having young people who are well along the way in finding their area in which they can function competently; a general public that puts more emphasis not on <u>what</u> work a man performs, but <u>how competently</u> and with what degree of feeling of significance he performs it. Behavioral science suggests that an individual will find it difficult to put forth his best efforts if he does not feel the significance of his work and if society at large doesn't feel it. A society cannot grow if it has many individuals who are in areas which do not fit their talents or who do not see beyond the day's task, who do not feel the effects upon the economic vitality of the nation and its individual citizens. As Whittier has said:

"Alas for him who never sees
The stars shine through his cypress trees."

We can develop courses of study and materials which will help our children to see work in terms of its basic contributions to man's development, who can grasp hold of the trends of development, who can begin to see new developments or changes coming, even contribute to them and be ready for them. We can cultivate more of the developmental spirit of Tennyson:

"The old order changes yielding place
To new and God fulfills himself in many
Ways lest one good custom should
Corrupt the world."

A New Rationale for Vocational Education

Melvin L. Barlow - a frontiersman among educators. His leadership in the development and improvement of vocational education is international in scope. As research physicist, professional engineer, instructor in mathematics, science and petroleum technology, and state education department supervisor, he can draw upon a wealth of experience. Add to this a genial personality. Awarded the Degree of Doctor of Education in 1949 by the University of California, Los Angeles, he now serves as professor of education and director, division of vocational education, at the institution. Editor of the 64th Yearbook (Part I) of the National Society for the Study of Education entitled "Vocational Education."

The dynamism of technology is playing a new theme in the symphony of American culture. The theme is Vocational Education. Well, it isn't exactly new, actually it has been present in the deep recesses of the social mores for a half century. Now and then its melody could be heard faintly--as during the period of the great depression or during World War II--but mostly its tune was drowned out by the general hum of a society in motion.

Change has backed society into a corner. Vocational education instead of being "on call" for a minor supporting part, is now being cast in a social leadership role; its qualities ring out loud and clear, but to many it is strange music.

But what is this term--Vocational Education--that has had so much attention recently, and why is it all of a sudden so important?

Vocations Defined

In the simplest of terms, a vocation is what a person does to earn a living. Hunting, flying, selling, surgery, carpentry, preaching, auto repairing, data processing, medical assisting, space technology, and hundreds of other names are used to identify how a person earns his living; how he performs his part of the work that society needs to have done.

If this is true, it follows logically then that Vocational Education consists of the formal planned educational process that provides the skills, knowledges, appreciations, understandings, and attitudes necessary for a person to enter upon the occupation of his choice and to become an acceptable member of the labor force. In this sense, vocational education is concerned with all persons and all vocations.

Original Federal-State Program

During the early years of the twentieth century, the Congress, reacting to public opinion, passed an Act which was designed to provide funds for the promotion and development of vocational education in certain well defined occupational areas: agriculture, home economics, and trades and industries. There was a pressing need for such instruction in America, it was a wise business investment to make, and it produced results immediately. All of the states entered into agreements with the federal government (we call these agreements State Plans) to organize and develop programs of vocational education around these specific occupational areas and according to the state's own needs.

As the years rolled on the Congress passed other acts in support of vocational education. We were able to improve the skill potential of the nation's workers measureably during the depression so that they could compete more effectively for available jobs. Within thirty days after President Roosevelt signed the bill for War Production Training, thousands of persons were enrolled in special classes in the vocational education programs of the nation--a perfect example of "providing for the common defense and promoting the general welfare."

New Concepts Needed

In the post-war years the space age arrived. The imperative demands of the new technology required a vastly different and improved vocational education program. In 1961 President Kennedy called for a national review of the vocational education program, for an evaluation, and for recommendations concerning its redirection. The Panel of Consultants on Vocational Education, appointed at the request of the President, studied the entire problem of vocational education, and its report--Education for a Changing World of Work--pointed out the necessity for a vast expansion in the quantity and availability of the program. In addition, recommendations were made that funds allocated to the states in support of the program take into account the needs of the people to be served rather than their occupations. Accordingly when the Congress passed the Vocational Education Act of 1963 (the Morse-Perkins Act) funds were allocated to provide for the vocational needs of (1) youth in high school, (2) high school youth with special needs, (3) youth in school beyond the high school, and (4) youth and adults who were in the labor force or who were unemployed.

New Basis

The change in federal orientation for vocational education was one that considered the people rather than the occupation. In simple terms this meant that vocational education programs could be organized for any occupation--excluded were only the professional occupations requiring a baccalaureate degree.

Now the new rationale, instead of being chained to occupational categories, was looking toward the future with a charge that said, "if a vocational training need exists in a community, take care of it." This was a new, bold, venture and it ushered into the full view of vocational education the needs of about 85 percent of the labor force. Furthermore, the new legislation was so flexible that it could be used, if Congress desired to do so, as the means of providing any kind of vocational training--for the unemployed, poverty programs, special manpower programs.

Now at the threshold of the new age of vocational education (an age of new flexibility in program organization) a number of major issues appear. The issues themselves are not particularly new, but the requirements of the present and the foreseeable future do call for a deeper understanding of these issues. Therefore they become a part of the new rationale for vocational education. Let us examine six of these issues.

1. Education's Commitment for Vocation

The historical view of this issue is most interesting. During our colonial period the commitment was largely for vocations that required a period of college or university study. Apprenticeship was an important educational institution in its own right, but it was largely a

private venture. Our first considerations for more comprehensive vocational education came with the proposals of Benjamin Franklin, in 1751, for an Academy that would provide generously for a wide range of occupational preparation. It was a good idea, but probably somewhat advanced for its time. Our educational consciousness did not dawn, really, until about 1820. At which time, due largely to the effects of the technological revolution and national growth, we began to think about the educational needs of a larger segment of the population. It was a long hard struggle and required most of the nineteenth century before we as a people became really committed to the education of all of the children of all the people--and even this education was confined largely to communication skills and to an understanding of our cultural heritage.

Vocational needs were satisfied largely by agricultural societies, mechanics institutes, a few special schools, and by special organizations of occupational groups. Any thoughts of vocational education as a part of the public responsibility for education were not commanding much attention. However, in the 1860's the Congress did provide for Agricultural and Mechanical Colleges. The trade school movement began to develop after 1881, although entirely through private initiative.

Shortly after the beginning of the twentieth century the compelling needs of agriculture and industry forced attention upon the desirability of special instruction in the secondary schools. This was a national problem. By 1917, the Congress had passed its first vocational education act, which would have an influence upon the educational program of the secondary school. Under these conditions vocational education grew rapidly. Later years brought other acts of Congress, and the nation learned gradually how it could tend to the vocational needs of its people. But because jobs were so easy to get, education in general provided only mild assistance.

The contemporary view of preparation for work is so commanding that a person desiring to enter the labor force must first have appropriate instruction. It is no longer a question of whether the public schools will become engaged in a large scale program of vocational education--they must do so! The thousands of students, out of school and out of work (many of whom are well educated in some respects), are the victims of our failure to meet this issue head on.

The new rationale for vocational education says that preparation for the occupational life that the student must lead is of major significance and must be so treated in education. The school has failed in its obligations to society when it permits its students to drop out or to graduate without having acquired realistic vocational goals. If he intends to go to work immediately upon graduation it is the responsibility of the school to see that he has been provided with the saleable skills necessary to perform satisfactorily on the job. The vocational motif in education must loom large in the future.

The necessity of vocational education is a FACT! But change does strange things to people. This emphasis upon vocation is not as formidable as some persons would make it out to be. It is not necessary to give up everything we hold dear, and have found to be successful in education; all that is being asked is that the vocational theme have some importance in education and that the curriculum include instruction in some kind of work. Otherwise we simply push the student out into a world that will not have him as a worker. Society must then create new devices in order to take care of him. It is education's obligation to prepare youth for the responsibilities of citizenship, and this includes the ability to become a producer of the goods or services that society needs. The professional literature in education frequently voices sentiment in support of the proposition that the school has this responsibility, and, if education does not meet this responsibility then society will create new institutions that will. You look around and you can see evidences of this already.

2. Work and the Public Image

It is strange that in our advanced state of development the public has a higher regard for the kind of work a person does, than it has for the quality of his performance, regardless of what that work might happen to be. We give some occupations an exalted status and we consider others in a category of little dignity. You may recall that John Gardner discusses this issue with examples such as public approval of poor philosophy but disdain for good plumbing. Society's theories and pipes will both leak in this case. We talk about blue collar workers and white collar workers and imply that somehow a person who has a white collar occupation is infinitely better than a person who has a blue collar occupation. This is pure nonsense. The public needs to wake up to the fact that it can never create qualities of excellence in occupational life when it pays tribute to some occupations while at the same time it tags others with low level values.

It is true that occupations differ; it is true that some occupations require a longer period of preparation; but it is not true that one occupation is necessarily better than another. We have given an artificial quality to some occupations. This public emphasis has its effect upon the education of youth and we encourage all of the students to seek to reach occupational goals on the basis of some kind of pseudo quality elements that reside inherently in the occupation.

There are concepts of the "Dignity of Labor" that must have new levels of respect and consideration both by education and by the public at large.

3. Value Systems and Subject Matter

A new rationale for the future of vocational education includes the issue of the subject matter of the school and the relative values placed on it. Some changes are imperative and the situation is extremely complex, which makes the pathway to action difficult.

For one thing we have not changed the length of time in school. Most schools are held for about six hours a day, five days a week, and for about 180 days in the year. On the other hand we have poked a number of requirements into the curriculum, have found value in a host of new subjects, and the curriculum is full to overflowing. You can't get much more than a quart of milk into a quart bottle. The result is that we have developed a subject matter competition in school that has the same kind of detrimental effect upon the student as has the status value of an occupation upon the worker. All we really know is that algebra, American history, automechanics, and English are different. We have no basis upon which to reach a judgment that one is more important than another.

Educators have developed some ideas of common elements that are required of all citizens and these are reflected in the school program. Furthermore the public believes that these elements are appropriate, and while some room for argument exists, everyone is in favor of the common learnings. In fact if Junior can't read, write, and calculate a bit he is effectively denied job opportunities. Most occupations have been consistently requiring higher and higher educational achievement. This trend is not likely to be reversed.

The problem is made even more difficult by having all subject matter work out in convenient packages, such as semesters or years, and so the limited time for study of the subject matter is soon filled by some of the experiences which have been regarded as essential and there is still a lot more to study.

Within the rationale for the future the idea of the student developing certain minimum competencies seems to make more sense than to have him complete some minimum length of time in the study of subject. Time is not the factor of importance.

Also we have not taken into account that some of the common learnings may be acquired with competency in experiences outside the classroom, or at least may be aided by these experiences. Programmed instruction offers many new challenges, for example. In addition we have not given full regard to the possibility that more than one subject can provide the desired competencies. It has already been demonstrated that an elementary electronics program can also teach algebra and physics as a part of electronics. It requires a good teacher, and some careful planning, but it can be done.

The whole issue is clouded even further by the indication that a particular course meets university entrance requirements. Somehow or other we have reached a state of confusion in our value system that says if the course is acceptable in meeting university requirements then it is obviously good. The education of youth has been enslaved by a false value attached to what are called "transfer credits."

We simply must be able to find more than one or two paths through the subject matter maze that can lead to an education, and although perhaps those paths are somewhat different, they ought to be equally honorable.

For a number of years we have been on an educational jag that identified certain courses as "general education" and others as something else, and if you can get your subject in the list called general education then there is no further problem. The tragedy of the situation is that most of the lists of subjects identified as "general education" are not very general--quite specific as a matter of fact--but the tragedy reaches critical proportions when one realizes that "general education" was never intended to consist of a list of subjects. All that was ever intended was to indicate that there were a number of goals, purposes, aims, directions, or hopes that education in general should achieve. How to be a good citizen, for example. These general aspirations of education are equally applicable across the subject matter field. It is as important that the welding teacher create an instructional environment conducive to the development of moral values and good citizenship as it is for the history teacher to do the same thing. The responsibility for these general values falls on all teachers.

A similar problem is caused by identifying some courses as vocational and others as non-vocational. We have built up the false notion that we can tell from the name of the subject whether or not the course is vocational. The only reason we call certain classes vocational is that all of the students in the class have similar vocational goals--carpentry for example. It is the intent of the student, not the name of the subject, that makes the class vocational. If our practice had been such that we separated students in history into two groups, those who were studying history because of a general interest (or because this is one of the areas that helps us understand our cultural past), and those students who had expressed their intent to become historians, then history for the latter group would be as vocational as is carpentry for the students who want to become carpenters.

Why is vocational education disturbed about this matter? First, successful vocational experiences now and in the foreseeable future seem to require that a higher degree of educational background be achieved. We must have a stronger background of basic education: students can no longer be permitted to fail in the general areas that are basic to the vocational. Second, the wave of technology is so compelling upon the various occupational areas that basic fundamentals of an occupation must be taught. It is a case of having both, not one or the other.

4. The College Bugaboo

The conception of college in the Public and the Educational mind is so distorted that we create all kinds of inadequate values. In practice and in theory the educator and the lay public think of students as composed of two groups--those who are going to college, and those who are going into vocations. If you are not in the college preparatory group you just don't exist.

Life insurance companies and savings and loan companies advertise generously telling parents to save their money to send their children to college, but for what purpose is never indicated. These groups could very well advertise to save so that parents can be in a position to educate their children to enter the world of work--98 percent of them will either become members of the labor force, or will be dependent upon someone who is. There are some people who simply don't have to work, but not very many. The implication is that those who go to college do not have vocational purposes. Nothing could be further from the truth.

We have built the college symbol into a monster that causes us to lose sight of some of our fundamental objectives. I have nothing against college attendance, my rebellion is against what this symbol is doing to most of our students in high school. If all of the high school graduates continued their education, and if there were no dropouts, then I would have no objection to having most of the vocational education offerings concentrated in the educational environment beyond the high school--call it by whatever name you wish, junior college, area school, community college, technical school, etc. But until this happens, and it is not likely to happen in the immediate future, it is imperative that the vocational needs of the students who drop out, or who graduate from high school and do not immediately continue their formal education be given adequate attention. This is not being done at the present time, anywhere!

5. The Cooperating Community

Another major issue of the future is the cooperating community. This is better understood among vocational educators than among educators in general, because Advisory Committees were invented by vocational education. From the very beginning of vocational education in this country we have insisted that its proper conduct required the advice and assistance of persons outside the field of education--business, labor, management, and other groups, depending upon the nature of the instruction. It is to the economic advantage of a community to have strong vocational education programs that are as much like the real occupational situation as possible.

Developing realistic programs can only be achieved with the assistance of the community. There are a thousand things that the community can do, and should do, to assist the schools to provide for the total vocational education needs of the community. We are told that 90 percent of the people who need vocational education have never heard of it. If this is true then every community needs to supply vocational instruction necessary for these persons to become self supporting units of society. It is somehow better in our culture to fill out an income tax blank than a request for relief assistance. Community groups can find these people, and in cooperation with the school authorities can make the community's vocational education needs known.

A prime requirement for community cooperating groups is that they play their role properly. The professional educators can administer and teach the school--they are specialists in this activity, and most likely they are better informed concerning the ways and means of education than is the average member of the community. But the community at large has a definite responsibility to the school and can be of infinite value, particularly in the area of vocational education, by identification of critical employment and unemployment problems that can be improved materially by appropriate training.

Never before has the school needed the assistance of the community to the extent reflected now by contemporary conditions. In vocational education community assistance is imperative.

6. Life-Long Learning

When we look into the unknown future in terms of a new rationale for vocational education, the problem of continuing education stands out in sharp focus. Roughly half of the vocational education programs conducted under the provisions of the federal acts have been provided for persons who are at work and who need to upgrade and update their vocational skills and theoretical knowledge. In the past the emphasis has been upon the issue of "getting ahead" in one's occupation. While this will unquestionably continue in the future, a new dimension has been added. A great share of the motivation will be supplied by automation and the general march of technology; the worker will be under great pressure to keep up with his job, and in order to avoid falling victim to job obsolescence it will be necessary for him to continue his education. But note, continue his education in reference to his job. Few people, if any, will be exempt from this responsibility.

Some writers have called attention to the fact that our conception of what constitutes an education is changing rapidly. We have lived so long with the idea that one can complete his education at a certain level--high school, junior college, college or university, or graduate school. But no matter at what educational level one leaves formal education and enters the world of work, he still must of necessity continue his education. The 10th grade dropout and the doctoral graduate have the same problem despite the fact that they work in different occupations.

Education and the community it serves must be alert to this development. It is not only the person's well being which is at stake; the economic stability of a community is affected also. The major responsible institution for life-long learning will continue to be the public school.

Summary

We are working with two very important items in the new rationale for vocational education: first, the flexibility of the new vocational education act, and its invitation to change; second, a willing and interested public. The experience of a half century was brought to bear upon the redirection of vocational education, and concurrently an aroused public is discovering the values of this area of education.

The new rationale therefore is based upon change directed toward the benefit of society.

Many issues must be reviewed and programs of action devised to meet them. Some of these issues are national in scope but all must be interpreted in state and local environments. I have chosen six of these issues for review:

1. Education's Commitment for Vocation
2. Work and the Public Image
3. Value Systems and Subject Matter
4. The College Bugaboo
5. The Cooperating Community
6. Life-Long Learning

The new rationale proposes that the centrality of education for work is imperative; that we need a more realistic view of work in society; that the ancient traditions of subject matter values are no longer tenable, and must be restated in order t retain these values in a new age; that our reverence for college (or education beyond the high school) must pay more attention to its vocational purposes; that the cooperating community is imperative; and that we are entering a cycle that conceives of the education of an individual in life-long terms.

Yes, it will cost much money, but no nation ever went broke educating its people.

A Challenge to Administrative Leadership

Grant Venn - a name of national importance. Author of the recent American Council on Education report entitled "Man, Education and Work," Dr. Venn has demonstrated his ability to inquire into and describe issues which confront America today. His forthright, constructive way of doing things prevails consistently and all who know him respect the integrity of his leadership. He has served as a vocational agriculture teacher, guidance and curriculum director, college professor and president, and school superintendent. The degree of Doctor of Education was awarded to him by Washington State University in 1952. He is well qualified to talk to leaders on the topic of leadership.

I would like to define administrative leadership as I see it and then relate it to the development of new vocational education programs.

The leadership of an administrator is based on the beliefs which the administrator holds as important and the way in which he views the changing role of the public school system. The real leadership of the administrator extends beyond his staff and the classroom into the issues of the community.

A community can support public schools to the degree that its citizens who make decisions can understand the role of the schools. The role of the schools is understood in terms of the citizen's experiences with the schools and a citizen's firsthand experience is probably considered most trustworthy by him. As an example, consider the experience of the citizens of Wood County Schools, West Virginia. Wood County represents one of the wealthier counties in West Virginia, yet in 1960 75 percent of its citizens who were over 25 years of age had not completed high school. If these citizens look upon school as the place where they failed or where they received little help or support, and if they succeeded in life without a high school education, it is easy to see how such citizens might not support public school programs with conviction.

However, a public school project which served Wood County citizens brought them into a new relationship with their schools and developed new understandings of the role of the public school system. During the summer of 1964, each senior high student and his parents were offered an opportunity to participate in counseling sessions about each student's future, his hopes and plans. Out of a potential of 3,600, 3,200 counseling sessions were held. A new relationship was established between our schools and our citizens, many of whom had never before talked with a high school teacher or counselor. During the following September, the largest bond issue ever voted in Wood County passed by an 87 percent majority. This is one example of how administrative leadership is related to the changing needs of the community and how this relationship offers opportunities to develop understanding of the potential contribution of the public schools.

Leadership Must Recognize Community Needs

Unless the leadership of the administrator is related to the issues of life in the community he serves, the role of the schools will be increasingly more limited and less well supported. With ineffective school leadership, the vital community struggling to provide for its needs will develop parallel systems to do the work formerly entrusted to the public schools. Potentially these new systems may be assigned all emerging programs. Through his lack of leadership the ineffective administrator may contribute to further isolation of the public school program.

The amount of educational funds currently routed through numerous agencies rather than the public schools indicates the plurality of our society's approach to education. This plurality of community educational efforts (pre-school programs, out-of-school youth programs, retraining programs) requires unprecedented administrative leadership of the public schools. Our public schools have unusual opportunities to cooperate, to share knowledge, to extend services, to enlarge horizons through working with and through emerging community agencies. In these new ventures, we must see beyond our experiences within the public school system as we have known it. There is already evidence that communities are currently restructuring their educational efforts and administrative leadership has a vital relationship to this reorganization of public educational community efforts.

Changing Forces in Society

The peoples of our communities have never lived with such rapid changes in the basic conditions of life. This is true throughout our nation and throughout the world. Many of these changes have taken place since 1940. Consider the explosion of the atom bomb, the beginning of rocketry, and the advent of television. It is hardly possible for us to grasp the extent of man's discoveries or knowledge, much less to fully understand the implications of what man can do. Some examples from a recent three-day Washington Conference on the changing forces in society and the implications for education may illustrate this point. Dr. Glenn T. Seaborg of the Atomic Energy Commission described the potential effect of the release of a thimbleful of a manmade transuranium element in a fusion explosion which would destroy all life on the earth and the earth itself. A geneticist from Johns Hopkins University described how transmission of certain genetic characteristics may now be identified, predicted and controlled. Our ability to harness energy for new productive powers will enable us to produce goods and products to provide for the needs of all human beings. These illustrations represent only a few of the drastic changes taking place in the conditions of life. Such changes now take place in a decade, or within one's lifetime, but no longer require a century.

Changes in Society Require a Re-evaluation of Our Experiences

Many of us have not been able to see our responsibility towards society beyond the limitations of the direct experiences we have had. When our experiences have been limited or narrowly defined or when we have not been willing to re-examine the meaning of our experiences, we are less able to see the opportunities which a changing society offers.

For example, during our youth, many of us grew up with scarcity as an economic fact. We learned the value of saving; we still remember "a penny saved is a penny earned." We considered stability a great virtue; generations lived

in the same town or community. Ownership of real property was a measure of wealth; 75 percent of wealth was measured in land or property.

The current changes in some areas of our lives are not ones of degree but rather ones of kind. The three examples above illustrate this point. Money currently saved may not be worth its current value in ten years. In a highly mobile society, man's stability or roots are not chiefly geographic ones. Capital resources in the future may be more human resources rather than land or goods. This latter premise is illustrated by the remark of a Du Pont official who said that Du Pont would stay in business if it suddenly lost all of its investments in plants and capital but that if it lost its personnel, it would be out of business in six months.

These changes in society suggest that we, as administrators, need to re-evaluate the meaning of our experiences in light of the economic and social changes of the present and the predicted trends of the future.

The Continuing Value of the Individual

In the midst of changes in society, in the nature of man's experiences, and in his ideas about what the schools should teach, one constant value has continued - the value of the individual child and the adult he may become. The school's great challenge is to look closely at the raw product with which it deals - each child in the school. If our focus as administrators is on the development of the individual, his uniqueness, his latent talent, his abilities to contribute then we would have a different perspective on underemployment and unemployment, job descriptions and manpower needs in our community.

A Need for Boldness in Education

Two outstanding documents have set forth the current issues in new vocational educational programs. Superintendents will find the April 1965 "Phi Delta Kappan" and the 1963-64 President's Manpower Report to Congress very helpful references on new views of vocational education. The following statement from Lloyd P. Williams in the "Phi Delta Kappan" states that the dichotomy of liberal and vocational education is a "misinterpretation of man's condition".

"Too many of us have too long believed that pure liberal education is the real answer. By the same kind of self deceiving logic, too many of us for too long have believed that pure vocational education is the educational answer. Such restricted views result in misinterpretations of man's condition. Sometimes this misinterpretation reflects itself in the naive criticism emanating from the fearful educational right. . . Sometimes it reflects the mindless suggestion that the solution to our problems of unemployment, school dropout, and juvenile delinquency is merely more vocational education. Leaders in a free society should understand that liberal education without reference to something constructive for a man to do in the economic life of the nation is futile and frustrating; they should also understand that job training or job retraining without making the enormous social and economic readjustments required by technology and automation is myopic self-deception.

Balance has rarely been achieved in man's collective history, and is equally scarce in his individual history. Educational history is likewise deficient. Perhaps the Athenians during the age of Pericles achieved it. And a few philosophic spirits such as Marcus Aurelius have achieved it. However, modern man seems less likely to do so than his predecessors, although the tenuous nature of his cultural, industrial, and military situation italicizes the need. On all sides, society and institutions are factionalized. We split into right and left, pro and con, good and bad. If these cleavages cannot be overcome in education, where the most rational and democratic principles should prevail then the future is dark indeed.

The liberal and the vocational disciplines need one another. Life requires them both; an adequate personality demands both. The vocational aspect of education and of life needs enrichment; it needs to be brought under the scrutiny of critical intelligence; it needs the illumination that comes with comparison; it needs the clear delineation provided by historical perspective; it needs the invigoration that comes from close involvement with the liberal disciplines. But by the same logic, the liberal disciplines need focus; they need to be pointed in some useful direction; they need association with the practical to overcome their abstract remoteness; they need to be tempered by the world of human problems; they need the enrichment that comes from close involvement with functional studies. The point may be generalized this way; each reinforces the other. When the liberal arts set the limits to the vocational arts, the latter are humanely and wisely channeled; when the vocational arts provide a practical reference line for the liberal arts, the latter are relevently infused through life. Each can be fulfilled only in association with the other."

A Redefinition of Work

Previously work was considered something that one had to do to produce food, clothing, and shelter. There was a time when one worked hard during the summer, stored rutabagas, spuds, and apples in the root house so that he could live through the winter. Now an individual can hardly afford to raise apples; the amount of time, energy and waste is too great. Currently most individuals buy what they need rather than produce it.

One of the chief products of one's work is money - the means by which one provides for himself and his family. Frequently the success of the worker is judged by the amount of money which he earns. This success or lack of it is felt by children in his family and influences their view of the world of work and their aspirations. A parent's attitude towards work, towards his economic assets, towards the use of his money is very relevant to the values which his children develop.

More than ever, man's role and place in society is defined by the work which he does. A man's work now defines the psychological-sociological role which he and his family have. A man out of work is a man out of place. Although he may have food and shelter, he does not have a place. Man without a psychological place faces a kind of starvation which has greater implications for distruction than a famine.

The effectiveness of the Peace Corps is probably connected with the human desire to have a place - to feel that one's role in life is significant. During a wonderful year with the Peace Corps, I valued the opportunity of working with so many men and women who wanted an opportunity to contribute their part in making the world a better place. It seems to be that the need to contribute - literally the necessity to contribute - is a characteristic of human beings which is satisfied through work; work as defined in a new sense of it being the opportunity to contribute in other ways than production of goods.

I believe that people of all ages feel the need to contribute productively, to give of themselves purposely. This need is demonstrated in many ways in our society - by the 15,000 restless young people on the Ft. Lauderdale beaches, by the youngsters on a sitdown strike in South Chicago, by the futility expressed by many of our senior retired citizens.

A New Context for Education Related to Work

In our country, education is the link between man and his work. In the next decade, it is predicted that the occupations requiring the most education will increase at a most rapid rate. Evidence from the past few years had demonstrated that the persons with the least education tend to be the unemployed and

that the rate of unemployment among school dropouts is very high. Our citizens are increasingly aware that education prepares a person for a vocation and opens doors to employment. This vital connection of education with the general and economic welfare of our nation was recognized when our nation was founded. Free public education should include preparation for an occupation, not only for the sake of the individual but for the total well being of our society.

The fundamental vocational program is teaching each child reading, writing and arithmetic and this part of the program continues throughout his entire education. Currently extensive community-based programs are supported which teach elementary learnings to adults in classes of 15 or less. It is time that such conditions were present for children in our primary grades.

Occupational skills built on these basic learnings must be provided in a quality program of diverse offerings. These two concepts of quality and diversity in occupational offerings are ones which most superintendents do not yet fully grasp. A quality program can be judged by how well an institution meets its obligations in terms of the needs of the individual student. These needs are diverse; much of the latent talent is not identified and many of the occupations at which these students will work do not exist as such today.

The guidance function of the school concerning occupational preparation should be critically re-examined and its purposes clarified. A guidance program should serve to widen the student's horizon and to broaden his understanding of himself and his relationship to the world of work. Many teachers are the best vocational educators; parents are also vitally interested in the student's plans. We have moved in our concern from "adjustment" of the individual to helping a student prepare for the situations in which he hopefully will find himself. This process of counseling and guidance, coordinated with many aspects of school life should assume an increasingly important role in the education of the student.

One of the guidance aspects of the school is the development of a full-time placement operation. As educators we should feel as much responsibility for assisting boys and girls in job entrance as we do in college entrance. When we assume this responsibility, we will be creating pressures for jobs just as there are pressures for college. But when this is done, the student who gets a job, like the student who gets the Merit Scholarship, will regard his public school education with new dignity and importance.

In helping boys and girls prepare for and enter a vocation, the school should not limit its efforts to this year's high school graduates. Forty percent of the boys and girls entering college drop out of collegiate work. These young people need assistance from their high school and college placement office.

Also we must consider our responsibility towards those boys and girls who do not receive a high school diploma. The responsible school can find a way to help these young people be more employable than they would be without the school's help. I would like to share the following illustration with you. In Wood County we have a large program for dropouts. Some of these youngsters represent the third generation that have given up hope and purpose and who had retreated from education and success. Our neighborhood Youth Corps has 800 youngsters; 400 of them were school dropouts. In our program we are sending report cards home; employers are hiring trainees through our high school placement office. Parents tell me their youngsters are bringing home the first "A" in their lives.

Action on the Issues

The issues which I have discussed are not limited to one county in West Virginia. To some degree, all superintendents are facing these issues within their communities. We are facing a great responsibility to explore many avenues by which learning takes place. We cannot think of education as defined by credits, points, marks, levels, or other outdated traditional forms.

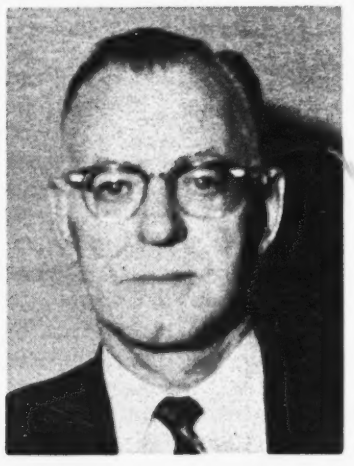
Each superintendent and his community will find ways to respond to the issues of our times. For the first time we have massive financial support for programs to truly serve children and the community. We will come to realize that many people will enter, leave and re-enter the stream of education for the rest of their lives. Our function is to create and design programs which will be flexible and versatile in helping people develop their places in society. Essential to our task is the recognition that each person and his work have value.

I feel privileged to share with you this search for better ways of doing the job. I wish to commend you and the Educational Research Council for the leadership which is being demonstrated in this part of the Nation. The kind of thinking that is being expressed at this conference promises much hope for the people of this area and beyond.

Consultants

Dr. Byrl R. Shoemaker, Director, Division of Vocational Education, and Edward J. Moriarty, Director, Bureau of Vocational Rehabilitation of the Ohio State Board of Education both served as consultants to the conference. Dr. Shoemaker provided the concluding remarks for the meeting.

Byrl R. Shoemaker was hardly interested in the Smith-Huges Act when it was passed by Congress in 1917. Twenty some years later he had become interested when he was appointed local supervisor, trade and industrial education, at Findlay, Ohio. Today, as President of the American Vocational Association and Director of the Ohio State Division of Vocational Education, he is giving national and state leadership in translating the new Vocational Education Act of 1963 into programs of service. Characterized as the most significant development in the history of vocational education, this law is changing the whole concept of occupational preparation. A graduate of Ohio State University, this institution conferred the degree of doctor of philosophy on him in 1957.



Edward J. Moriarty, Director of Ohio's Bureau of Vocational Rehabilitation, an arm of the State Board of Education. Starting as a rehabilitation counselor in the Bureau's Cleveland office in the days of the great depression, Ed Moriarty climbed through the levels of responsibility to head of the agency. Through his leadership it has grown to its present stature. As a member of the Council of State Directors of Vocational Rehabilitation, he contributes to the development of national policy of the Vocational Rehabilitation Administration of the Federal Government. He is a strong believer in the dignity and worth of people, and the results of his agency prove it.

Conferees

Adams, Ralph P.	Cuyahoga Heights Public Schools	Principal, High School
Baird, Dr. George H.	Educational Research Council	Executive Director
Barlow, Dr. Melvin L.	University of California at Los Angeles	Director, Vocational Education
Barr, Dr. Frank	Fairview Park Public Schools	Superintendent
Bell, Robert	Brooklyn Public Schools	Director, Secondary Education
Bennett, Arthur	Rocky River Public Schools	Principal, High School
Berggren, Thorsten	Shaker Heights Public Schools	Director, Curriculum
Blankenship, Dr. Alden H.	Educational Research Council	Director, Administrative Services
Boddy, Gordon	Olmsted Falls Public Schools	Principal, High School
Brain, Dr. George	American Association of School Administrators	President
Britton, Dr. Leonard M.	Orange Public Schools	Assistant to the Superintendent
Brown, Richard	Wickliffe Public Schools	Teacher, Industrial Arts
Buchanan, Burwell O.	Fairview Park Public Schools	Guidance Counselor
Buck, Dr. Charles	Educational Research Council	Research Associate, GCMP
Cawrse, Dr. Robert C.	Bay Village Public Schools	Superintendent
Colonius, George N.	Aurora Public Schools	Principal, High School
Cross, Jacque	Ohio State Department of Education	Division of Special Education
Cunningham, George	Educational Research Council	Program Director, GCMP
Davis, Dr. Harold S.	Educational Research Council	Director, In-service Education
Deutschlander, G. H.	Berea Public Schools	Coordinator, Secondary Education
Dorner, Charles	South Euclid-Lyndhurst Public Schools	Vocational Counselor
Douglas, Tony	Westlake Public Schools	Assistant Superintendent
English, Raymond	Educational Research Council	Program Director, GCSSP
Faulhaber, Kenneth	Mayfield Public Schools	Assistant Superintendent
Ferion, Al	Berea Public Schools	Supervisor, Trades and Industry
Gallaher, Dr. Paul C.	Berea Public Schools	Superintendent
Gilchrist, Dr. Robert S.	Educational Research Council	Director, Curriculum Research
Gurney, Theron	Mayfield Public Schools	Principal, High School
Hamilton, Dr. Ross E.	Educational Research Council	Research Associate
Hoskins, LeRoy	Rocky River Public Schools	Guidance Counselor
Justice, Robert	Chardon Public Schools	Guidance Counselor
Kelly, Dr. Samuel	Ohio State University	Economics Department
Kerka, Joe	North Olmsted Public Schools	Director, Industrial Arts
Kinney, Dale	Springfield Township	County Superintendent
Knape, Arthur	Lakewood Public Schools	Director, Secondary Education
Krapes, Robert	North Olmsted Public Schools	Director, Curriculum
Kujala, Jack R.	Educational Research Council	Coordinator, Data Processing Project
Laczko, John	Wickliffe Public Schools	Director, Industrial Arts
LeGrande, Dr. Raymond	Brecksville Public Schools	Assistant Superintendent
McClintock, Douglas	Kirtland Public Schools	Superintendent
McConahay, David	Westlake Public Schools	Assistant Principal, High School
Mayer, Lewis	Educational Research Council	Research Associate
Michel, Gerald M.	Wickliffe Public Schools	Superintendent

CONFEREES (Cont'd)

Moore, Jack	Fairview Park Public Schools	Principal, High School
Moriarty, J. Edward	Ohio State Department of Education	Director, Vocational Rehabilitation
Morse, Lloyd	Wickliffe Public Schools	Director, Curriculum
Novicky, Monsignor William	Catholic Diocese of Cleveland	Assistant Superintendent
Ojemann, Dr. Ralph H.	University of Iowa	Institute of Child Behavior
Olsen, David E.	Educational Research Council	Research Associate
Palermo, Michael	South Euclid-Lyndhurst Public Schools	Director, Secondary Education
Ray, Robert C.	Cuyahoga Heights Public Schools	Superintendent
Reed, Erwin	Cuyahoga County	Superintendent
Rice, Clarence L.	Brooklyn Public Schools	Superintendent
Rummel, D. D.	Springfield Township Public Schools	Superintendent
Sagehorn, Dr. Erwin	Lutheran Schools of Cleveland	Superintendent
Scheetz, Harvey	Mayfield Public Schools	Superintendent
Schramm, M. B.	Cuyahoga Heights Public Schools	Director, Vocational Trades
Schumann, Robert	Springfield Township Public Schools	Supervisor, Secondary Schools
Scott, H. Don	Chardon Public Schools	Superintendent
Seaman, Everett	North Olmsted Public Schools	Director, Pupil Personnel
Shankland, Alan C.	South Euclid-Lyndhurst Public Schools	Superintendent
Shannon, Charles	P.O. McIntire Company	President
Shoemaker, Dr. Byrl	Ohio State Department of Education	Director, Vocational Education
Skoczen, Stanley	Independence Public Schools	Superintendent
Stanavage, Dr. John A.	Shaker Heights Public Schools	Principal, High School
Stinson, Dr. S. Robert	Shaker Heights Public Schools	Guidance and Special Services
Streitmatter, Kenneth	Rocky River Public Schools	Director, Curriculum
Venn, Dr. Grant	Wood County, West Virginia	Superintendent
Walter, Dr. Franklin B.	Westlake Public Schools	Superintendent
Warren, Richard E.	Muskegon Public Schools	Superintendent
Zimovan, Frank	Olmsted Falls Public Schools	Guidance Counselor

Our Appreciation

to the Cleveland Plain Dealer, the Cleveland Press, WJW-TV, and KYW-TV for excellent news reports to the community about the conference.

BOARD OF TRUSTEES

Educational Research Council of Greater Cleveland

President
RAYMOND Q. ARMINGTON
President, The Triax Company

Vice President - Secretary
RALPH M. BESSE
President, The Cleveland Electric Illuminating Company

Vice President
GEORGE GUND
Chairman, The Cleveland Trust Company

Treasurer
HARRY F. BURMESTER
President, Union Commerce Bank

Executive Director
DR. GEORGE H. BAIRD
Educational Research Council

Members:
WILLIAM H. EELLS
Regional Manager, Civic and Governmental Affairs, Ford Motor Company

WADE N. HARRIS
President, Midland-Ross Corporation

EDWARD E. HELM
President, The Reliance Electric & Engineering Company

WILLIAM IRRGANG
President, The Lincoln Electric Company

SAMUEL S. KAUFMAN
President, Campus Sweater & Sportswear Company

VAN H. LEICHLITER
Vice President - Wire Operations, United States Steel Corporation

EDWARD W. SLOAN, JR.
President, Oglebay Norton Company

SIDNEY H. SMITH
Manager, Chevrolet-Cleveland Manufacturing Plants, General Motors Corporation

CHARLES E. SPAHR
President, The Standard Oil Company of Ohio

WALTER S. SPARLING
President (Retired), The Ohio Bell Telephone Company

HENRY W. SPITZHOFF
Vice President, Case Institute of Technology

T. LAURENCE STRIMPLE
President, The National Acme Company

ALBERT J. WEATHERHEAD, JR.
President, The Weatherhead Company

Council Staff*

Dr. George H. Baird	Executive Director	Mr. Michael Constant	Research Associate, Humanities
Mr. L. Romanos	Assistant Director		
Dr. Alden H. Blankenship	Assistant Director	Dr. John W. Evans	Research Associate, Curriculum Research
Mr. L. T. Pendleton	Assistant to Director		
Dr. Harry S. Broudy	Consultant, Curriculum Research and Humanities	Mr. Lewis F. Mayer	Research Associate
		Mr. David E. Olsen	Research Associate, Special Projects
Mr. Lester V. Smith	Director, Health and Physical Education	Mrs. Natalia Dimitriu	Librarian
Mr. Leonard M. Slominski	Director, Vocational Education		

Greater Cleveland Social Science Program

Mr. Raymond English	Program Director	Mr. James W. Langer	Research Assistant
Mrs. Ethel K. Howard	Assistant Director, Special GCSSP	Mr. David Leist	Research Assistant
		Mrs. Helen L. Lin	Research Assistant
Mr. John W. Dye	Administrative Head	Mrs. Marilyn C. McLaughlin	Research Assistant
Miss Mary Catherine McCarthy	Editor	Mrs. Toni Meltzer	Research Assistant
Mr. Theodore N. Ferris, Jr.	Production Manager	Mrs. Olga Meyer	Research Assistant
Miss Agnes Michnay	Editorial Assistant	Mrs. Gayle P. Parr	Research Assistant
Mr. Harry G. Reader, Jr.	Research Associate	Mrs. Catherine S. Roth	Research Assistant
Miss Marie M. Richards	Research Associate	Miss Villa Smith	Research Assistant
Mr. Sherwood J. B. Sugden	Research Associate	Miss Louise J. Sundberg	Research Assistant
Mr. John E. Willmer	Research Associate	Mr. Gilbert M. True	Research Assistant
Mrs. Marlene D. Zweig	Research Associate	Mrs. Judith Wentz	Research Assistant
Miss Delores M. Beck	Research Assistant	Miss Helen Zink	Librarian
Mrs. Nancy Bostick	Research Assistant	Sister M. DeLourdes	Coordinator, Cleveland Diocese
Mrs. Elizabeth Colebrook	Research Assistant		
Mr. John E. Dalrymple	Research Assistant	Dr. Phillip Bacon	Consultant
Mr. Robert H. Frenier	Research Assistant	Dr. Harold F. Clark	Consultant
Mrs. Nancy Henderson	Research Assistant	Dr. Russell Kirk	Consultant
Mr. Charles G. Johnson	Research Assistant	Dr. William H. McNeill	Consultant

Greater Cleveland Mathematics Program

Mr. George S. Cunningham	Program Director	Mr. Richard Parker	Research Assistant
Dr. William Hale	Assistant Program Director	Mr. David Raskin	Research Assistant
Dr. Charles Buck	Research Associate	Mr. Robert Kollar	Editorial Assistant
Dr. Lucy Davis	Research Associate	Miss Susan J. Williams	Editorial Assistant
Mr. S. Edwin Humiston	Research Associate	Dr. Max Beberman	Consultant
Miss Lucille McCraith	Research Associate	Dr. Jack E. Forbes	Consultant
Miss Rae Marie Parsons	Research Associate	Dr. Phillip S. Jones	Consultant
Miss Margaret Russell	Research Associate	Dr. John G. Kemeny	Consultant
Mr. Harold R. Frazier	Research Assistant	Dr. George Polya	Consultant
Mrs. Ruth Humiston	Research Assistant	Mr. Harry D. Ruderman	Consultant
Mr. Stephen L. Merkel	Research Assistant		

Reading and i.t.a. Projects

Mr. Robert E. Willford	Coordinator	Miss Laura Parish	Research Assistant
Mrs. Eleanor Zirzow	Research Assistant	Mrs. Jocelyn Benjamin	Research Assistant

Greater Cleveland Science Program

Dr. Ted F. Andrews	Director	Miss Betty J. Schaffer	Administrative Assistant

Child and Educational Psychology — Preventive Psychiatry

Dr. Ralph H. Ojemann	Director	Mrs. Melania Tipnis	Research Assistant
Dr. Karen Pritchett	Research Associate	Dr. Leon J. Saul	Consultant
Mr. Richard Morrell	Research Assistant	Dr. Silas Warner	Consultant
Mr. David W. Hyde	Research Assistant		

Department of In-Service Education and Staff Utilization

Dr. Harold S. Davis	Director	Mr. John Wiegand	Research Assistant
Mr. Mel H. Robb	Research Assistant	Dr. J. Lloyd Trump	Consultant

Evaluation and Testing Department

Dr. Wai-Ching Ho	Director	Miss Sarita Schrock	Research Assistant
Dr. Thomas E. Bibler	Research Associate	Dr. John B. Carroll	Consultant
Mr. Thomas O'Brien	Research Associate	Dr. Robert Glaser	Consultant
Mr. Bernard Shapiro	Research Associate	Dr. Thomas Hastings	Consultant
Mr. Albrecht Saalfield	Research Assistant	Dr. Maurice Tatsuoka	Consultant

Data Processing Project

Mr. Jack R. Kujala	Manager	Mr. Elmer F. Bowhall II	Systems Programmer
Mr. Frank G. Richards, Jr.	Systems Manager	Mrs. Ruth Hurst	Staff Assistant
Mr. Richard Elrick	Operations Manager		

Operations and Production

Mr. D. Vassiliou	Assistant Manager	Mr. John Strnad	Printing
Mr. Leo F. Hamburger	Chief Accountant	Mr. Henry J. Briggs	Graphic Arts

***October, 1966**